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JOURNAL OF THE ELITE FORCES & SWAT UNITS

VOL.28

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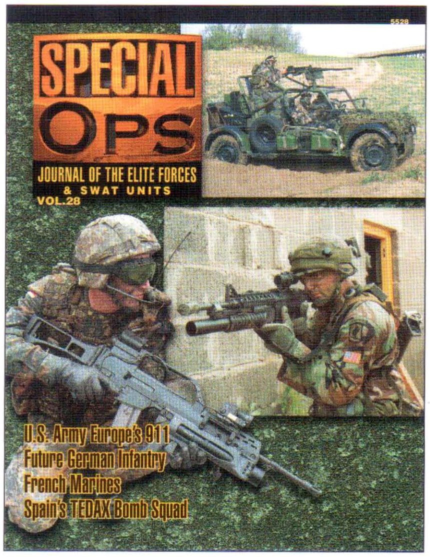
Future German Infantry
French Marines
Spain's TEDAX Bomb Squad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Editor: Samuel M. Katz
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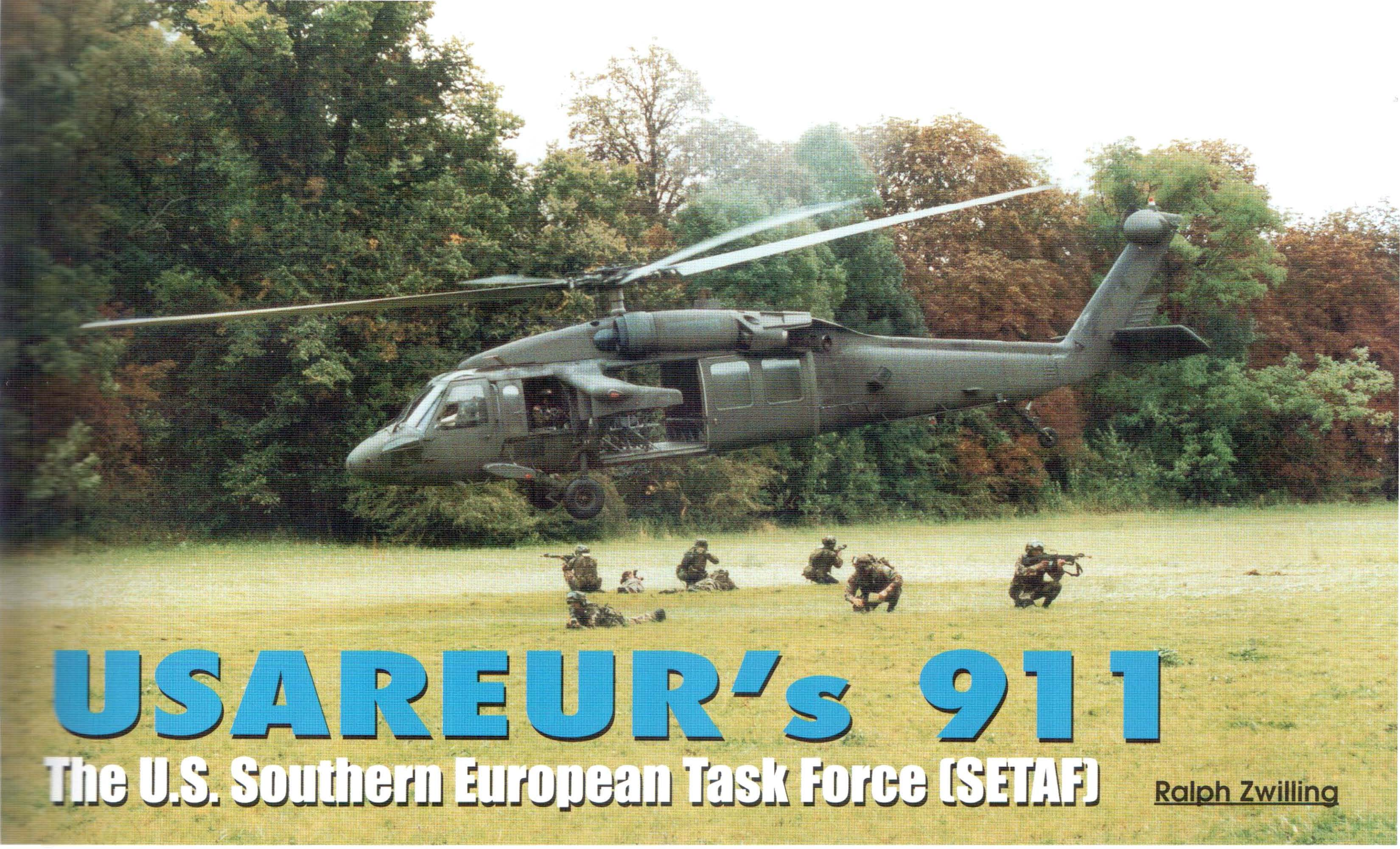


USAREUR's 911

The U.S. Southern European Task Force (SETAF)

Ralph Zwilling

The helicopter leaves the hot LZ as soon as the last trooper has left the cabin. This UH-60L Black Hawk belongs to the 3rd Battalion, 158th Aviation Regiment "Storm Riders" based in Giebelstadt, Germany.

Perhaps no military development has been so revolutionary as the employment of paratroopers in the armed forces. In 1495, Leonardo da Vinci sketched the first layout drawing of a man-sized parachute, even though no one had ever flown. It took more than 400 years, until the end of the 19th century, until the first men used their homemade parachutes to jump out of captive balloons. During its early days, parachutes were mostly used to rescue ballooners and pilots who had to exit their aircraft under emergency conditions. The first military parachute presentation was on 14 April 1889 in Berlin-Schöneberg, Germany, when ballooner Charles Leroux jumped out of a balloon with a parachute at a height of 1,000 meters in front of German Army Headquarters ordnance officers. In World War I, the parachute was primarily used by the military to rescue balloon

A medic of the 1st Battalion, 508th Infantry Regiment (Airborne) identifies incoming paratroopers as they jump into the Combat Maneuver Training Center during Exercise "Agile Lion 2002".

"Sky Soldiers" descend from heaven under their T10M parachutes. Within seconds all paratroopers exit the C-130 Hercules and the last trooper is in the air before the first hits the ground. At an altitude of 70 meters (230 feet), the ALICE rucksack is dropped from a lanyard. Its impact with the ground warns the trooper that the ground is near.

"Sky Soldiers" jumping out of the side doors of the C-130 Hercules over the Hohenfels DZ during a sunny October day in Germany.

observers and pilots. The U.S. Army ignored parachutes, and American pilots flew into combat without any rescue system because their generals thought they would abandon their planes at the slightest chance of trouble. Only the German Army provided parachutes for their pilots during World War I.

But the U.S. Army did not completely abandon development of the parachute. In 1919, a board was established at McCook Field to determine which type of parachute was suitable for American aviators. By 1922, a parachute had become part of the required uniform for military and airmail pilots, and the parachute design remained unchanged for the next fifty years. In 1928, the Soviet Union organized the first airborne troops, who saw their first action in 1930 during a training exercise south of Moscow. Germany also determined to build an airborne arm of the military after a very successful Soviet exercise in 1935 where 1,000 airborne soldiers in the Ukraine secured the landing zone for a follow-on force of an additional 5,000 soldiers. The German paratroopers, called *Fallschirmjägertruppe*, would be used to spearhead assaults.

PALACIOS
US

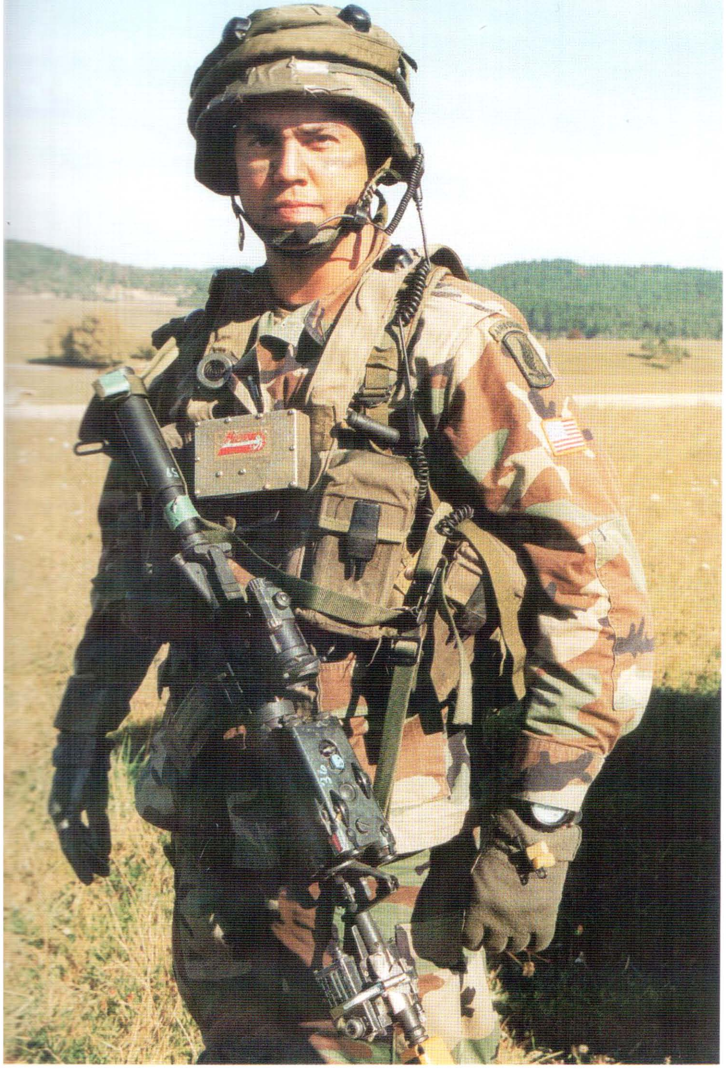
Radio communication is a key element after landing on the DZ since the troopers have to find their assembly areas quickly to begin engaging the enemy.

GARCIA
U.S.ARMY
SETAF-1ABN-

A trooper of the 1-508th INF BN (ABN) "Red Devils" watches and waits for his comrades who jumped minutes before. He is armed with the 7.14-kg (16-lb) PARA version of the combat proven 5.56mm M249 Squad Automatic Weapon with a collapsible buttstock.

The *Fallschirmjägertruppe*, founded on 29 January 1936, saw action during battles in Norway, Denmark, Holland, and, of course, on the island of Crete on 20 May 1941. On that date, 8,100 *Fallschirmjäger* dropped to fight against the allies in the largest German airborne operation of World War II. Crete was afterwards dubbed the graveyard of the *Fallschirmjäger* due to the high casualty rate. A total of 1,915 officers and men were killed, 1,632 were wounded, and 1,759 were listed as missing in action. It was also the first time in history that an island had been taken by an airborne assault.

The U.S. Army formed its first platoon of parachute volunteers in 1940, and they made the first mass jump on 16 August 1940 from a Douglas B-18 over Lawson Field. The first U.S. airborne regiment, the 501st, was organized in April 1941 and the first U.S. jump school was established at Ft. Benning, Georgia. The first two U.S. divisions selected for reorganization as airborne divisions were the 82nd Airborne Division "All American" and the 101st Airborne Division "Screaming Eagles", which were organized on 15 and 16 August 1942, followed by the 11th, 13th and 17th Airborne Divisions. On 8 November 1942, the 509th Parachute Infantry Regiment (PIR) made the first U.S. Army combat jump at Tafaraoui in Algeria during Operation "Torch". The next combat jump was made by the 504th PIR in Sicily. Other U.S. combat jumps made during WW II by the 82nd and the 101st Airborne Divisions include the Normandy invasion on 6 June 1944 and the September 1944 jumps at Nijmegen-Arnhem to take control of the bridges that crossed the Rhine river into Germany.



The armament of this fire team leader consists of a 5.56mm M4A1 Carbine with attached M68 Reflex Sight and AN/PAQ-4C Infrared Aiming Light. The M4 carbine, like the M16A4 rifle, fires in either semi-automatic or three-round-burst automatic mode via a selector switch. In addition, the M4/M4A1 carbine has a removable carrying handle with a sight mounted on an integral MIL-STD-1913 Picatinny Rail on the upper receiver.

During the next several decades, numerous combat jumps and missions followed in Germany, the Philippines, Korea, Vietnam, Grenada, and Honduras. U.S. Airborne soldiers were also involved in Operation "Just Cause" in Panama in 1989, Operations "Desert Storm" and "Iraqi Freedom" against Iraq in 1991 and 2003 respectively. The paratroopers' combat record tells a story of extreme valor. Since the first combat jump during World War II in North Africa, paratroopers have fought with a spirit, determination and tenacity that has captured the respect of the world. Future events will continue to find the American paratrooper in the forefront of hostilities. In the following article, Assault will provide you a closer look behind the scenes at the only U.S. Army airborne unit based in Europe today, the Southern European Task Force (SETAF) located in Vicenza, Italy.

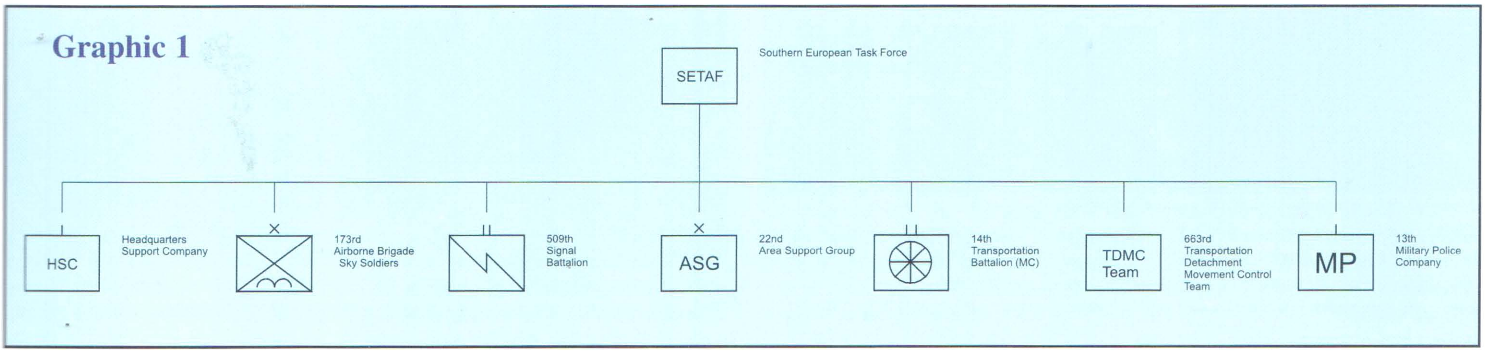
The SETAF paratroopers are USAREUR's elite soldiers and the first choice when it comes to responding to crises and contingencies anywhere within the U.S. European Command's area of responsibility. Soldiers from 1st Battalion, 503rd Infantry Regiment (Airborne) "The Rock" experience the realism of urban fighting while training in the CMTC Mini-MOUT Kittensee during "Agile Lion 2002". It is essential that the troopers provide 360-degree security and search the terrain for any possible ambush..

Troopers provide supporting fire during a MOUT training in the CMTC while their comrades try to enter an OPFOR-occupied building. Note the bags fixed on the team leader's right knee, the kneepads and the flyers gloves.

SETAF's Mission

SETAF is an airborne rapid reaction force and Joint Task Force headquarters ready to respond anywhere within the U.S. European Command's (EUCOM) area of responsibility (AOR) and is therefore often named USAREUR's 911. SETAF's mission is to provide trained forces (including a Joint Task Force headquarters) that are deployable within 72 hours. SETAF currently consists of the Headquarters Support Company, 173rd Airborne Brigade, 22nd Area Support Group, 509th Signal Battalion, 14th Transportation Battalion (MC), 663rd Transportation Detachment Movement Control Team, and the 13th Military Police Company **(Graphic 1).**

Graphic 1



SETAF
Southern European Task Force
HSC
Headquarters Support Company
173rd Airborne Brigade Sky Soldiers
509th Signal Battalion
ASG
22nd Area Support Group
14th Transportation Battalion (MC)
TDMC Team
663rd Transportation Detachment Movement Control Team
MP
13th Military Police Company

SETAF soldiers are drilled to enter a building very quickly. Usually when the "Red Devils" enter a building through the windows, one of the troopers kneels in front and provides a human ladder for his comrades standing in a position along the wall. The last soldier in line covers his team's rear and searches the terrain for any possible OPFOR ambush.

After entering the building, the paratroopers quickly go into defensive positions, using all their weapons to defend against a possible OPFOR attack.

The Southern European Task Force is an integral part of the European Command's theater engagement strategy, participating in combined exercises in Morocco, Tunisia, Bulgaria, Slovenia, Ukraine, and Hungary, and deployments to Botswana, Russia, Kosovo, and Bosnia. SETAF remains a major subordinate command of the U.S. Army Europe (USAREUR). With approximately 2,500 soldiers assigned or in tenant support units, USASETAF is the largest U.S. Army force south of the Alps in Europe, with responsibilities throughout the Southern Region and the Mediterranean area.

SETAF`s soldiers train at home station, at other areas within Italy, and regularly travel to Germany to take advantage of the training opportunities available both in Grafenwöhr and Hohenfels. Airfield seizures and non-combatant evacuation operations (NEO) are SETAF specialties, and conducting an annual full-scale exercise involving both ensures that soldiers are prepared to conduct such complicated and potentially hazardous missions. SETAF plans and conducts joint wargame or stability operations in NATO's European Command area of responsibility. It enhances regional stability by providing host nation liaison for operations conducted in Italy and provides a deployable core of a Joint Task Force oriented toward stability operations.

SETAF's History

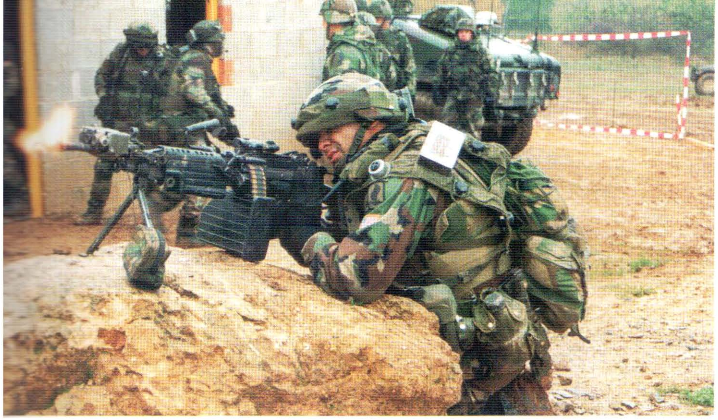
The origins of the U.S. Army Southern European Task Force lie in Austria and Camp Darby, Italy. In 1951, the U.S. and Italy signed an agreement that the U.S. would operate lines of communication across Italy, and that the U.S. would occupy land near Livorno. This land became Camp Darby, named for Brig. Gen. William O. Darby, who was killed in action in northern Italy, April 30, 1945. All U.S. occupation forces in Austria were withdrawn after the Austrian State Treaty was signed in 1955. Under provisions of the agreement with Italy, Camp Darby was the base for the exit from Austria of soldiers, equipment and supplies.

With Austria neutral, northern Italy's eastern flank became vulnerable to attack. To reduce the danger in that area, the U.S. agreed to establish a force there, and on 2 October 1955, the U.S. Army Southern European Task Force was activated. USASETAF's first headquarters was at Camp Darby, but the largest number of soldiers has always been in Vicenza. Shortly after activation, USASETAF moved the headquarters from Verona to Caserma Passalacqua. Troop strength reached 10,000 and USASETAF was formally established with a U.S.-Italian agreement. In 1959, following President Eisenhower's visit to Rome, a third agreement brought significant changes to USASETAF. Italy's military forces had been re-established. U.S. troop strength was cut in half, equipment from disbanded U.S. units was turned over to Italy, and Italian Army personnel were assigned to the USASETAF general staff to assist with unique bi-national responsibilities. The headquarters moved again in 1965 to Caserma Carlo Ederle in Vicenza. Soldier strength dropped to 2,500 in 1970 and civilian employment went down 70 percent in a unilateral cost reduction effort. The port opened by 8th Area Support Group in Livorno was returned to Italian control.

SETAF's mission and geographical area of responsibility increased in 1972 when the command enlarged its signal support unit and took control of the 558th U.S. Army Artillery Group in Greece and the 528th USAAG in Turkey. These units had been in support of NATO since the early 1960s, along with the 559th USAAG, which had been a USASETAF unit in Italy since 1964. With the assignment of the 1st Battalion, 509th Infantry (Airborne Battalion Combat Team) in 1973, SETAF accepted the missions of maintaining and deploying a battalion on its own or as part of the Allied

A M240B machine gunner and his assistant in the Mini-MOUT Kittensee. The 7.62mm M240B is equipped with an Elcan M145 sight mounted on the MIL-STD-1913 Picatinny Rail. This optical sight was developed specifically for the U.S. Army and is in wide service on M240B and M249 machine guns. With the special M4 reticle option, it is also in service on M4 Carbines.

"Rock 'n' Roll." A "Red Devil" machine gun team provides fire while their comrades enter an OPFOR-occupied village as part of a non-combatant evacuation operation (NEO). The 7.62mm M240B has a maximum effective range of 1,800 meters (5,900 feet) and a cyclic rate of fire of 650-950 rounds per minute.



Every infantry fire team has a trooper equipped with a 5.56mm M249 Squad Automatic Weapon. The Squad Automatic Weapon's PARA version has a cyclic rate of fire of 700-1,000 rounds per minute and weighs 7.14kg (16lb). The 3.12-kg (7-lb) plastic box contains 200 rounds of ammunition.

Crucial to the successful execution of paratrooper operations is the ability to care for wounded comrades behind enemy lines. Note the SAW gunner providing covering fire for his squad members.

Command Europe Mobile Force (Land). The ABCT, with its own artillery battery, has been redesignated three times, with 1st Battalion, 508th Infantry Regiment "Red Devils" (ABCT), serving in Vicenza since April 1996.

Until 1992, USASETAF was considered a logistical command. In addition to the ABCT and the three USAAGs, SETAF operated a major depot at Camp Darby with the 8th Area Support Group (ASG). With its designation as a Support Command and later a Theater Army Area Command, USASETAF was to be responsible for the reception, preparation for combat and onward movement of forces entering the southern region for general war.

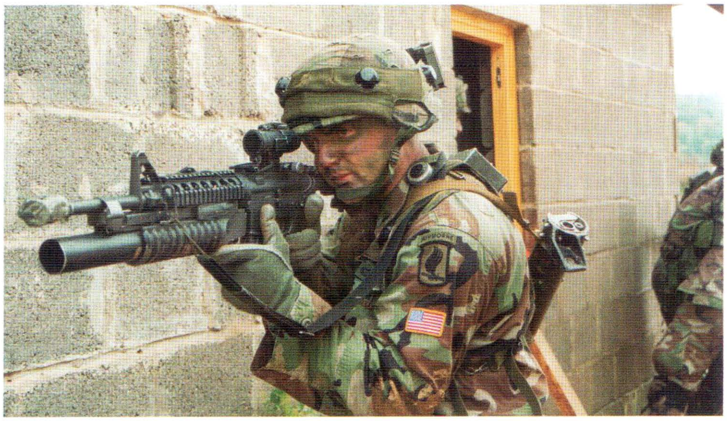
The political reorientation of Europe in 1989 and 1990 caused a major revision of U.S. and NATO military priorities. With the drastic reduction of the threat of a general war, SETAF received new missions for regional tactical operations as command and control headquarters for Army and Joint units. Its three artillery groups were inactivated and the two support groups became support groups with unique missions. The 8th Area Support Group's depot operation developed into the maintenance and issuance of theater reserve stocks organized in unit sets sufficient to fully equip a heavy brigade.

In January 1994, an infantry brigade was established at SETAF to provide command and control of SETAF's deployable units. In August 1994, the newly formed brigade deployed to Rwanda for Operation "Support Hope" to aid millions of displaced citizens. This same operation saw portions of the USASETAF headquarters deploy for the first time in history as the nucleus of the Joint Task Force Headquarters. By December 1995, Operation "Joint Endeavor" was in its initial stages. SETAF demonstrated its role as the theatre's reaction force by deploying implementation forces into Bosnia-Herzegovina as the lead element of the Dayton Peace Accord. After being relieved in-place by the 1st Armored Division "Old Ironsides" in March 1996, SETAF units redeployed to Vicenza. Upon returning, the 3-325th ABCT "Blue Falcons" were redesignated as the 1-508th ABCT "Red Devils."

April 1996 proved to be exceptionally busy. Elements of the SETAF Infantry Brigade deployed to Dubrovnik, Croatia to secure the crash site of U. S. Treasury Secretary Ron Brown's plane. Another company-plus deployed to Monrovia, Liberia with special operations forces to facilitate non-combatant evacuation operations (NEO). In November 1996, portions of the SETAF-led Joint Task Force Guardian Assistance deployed to Uganda and Rwanda to assess the needs of Rwandan refugees in Zaire. When refugees began returning to Rwanda, the mission changed to verifying refugee numbers and informing Rwanda and assistance agencies. A SETAF-led Joint Task Force (JTF) headquarters deployed again in March 1997 as part of Operation "Guardian Retrieval". The mission was to establish an enabling force in Congo in preparation for the potential evacuation of non-combatants from Zaire. The JTF redeployed upon a peaceful government transition in Zaire.

SETAF provided reception, staging and movement support to TF Hawk during Operation "Allied Force" in the spring of 1999 and to deploying KFOR units later in the year. From March to July of 1999, SETAF assumed the strategic reserve mission for the Stabilization Force

A 1st Armored Division M981 FIST-V evacuates civilians while the SETAF paratroopers secure the area and search the terrain for any possible OPFOR ambush.



The 5.56mm M4A1 Carbine is the standard rifle of SETAF airborne infantry soldiers. This grenadier's carbine is also equipped with a M203A1 grenade launcher and an Aimpoint M68 reflex sight. Most of the soldiers prefer to wear flyers gloves instead of the thick Intermediate Cold Weather Gloves (ICWGs). Troops stated that they would rather wear thin gloves and have cold hands than wear the ICWGs, have warm hands, and not be able to manipulate their weapons and other equipment.

Every rifle company has a mortar section with two M224 60mm Lightweight Mortars. The M224 has a maximum effective range of 3,490 meters (3,815 yards) and a maximum rate of fire of 30 rounds per minute. The mortar system consists of the M225 Cannon Assembly, the M170 Bipod Assembly, the M7 Baseplate, and the M8 Auxiliary Baseplate.

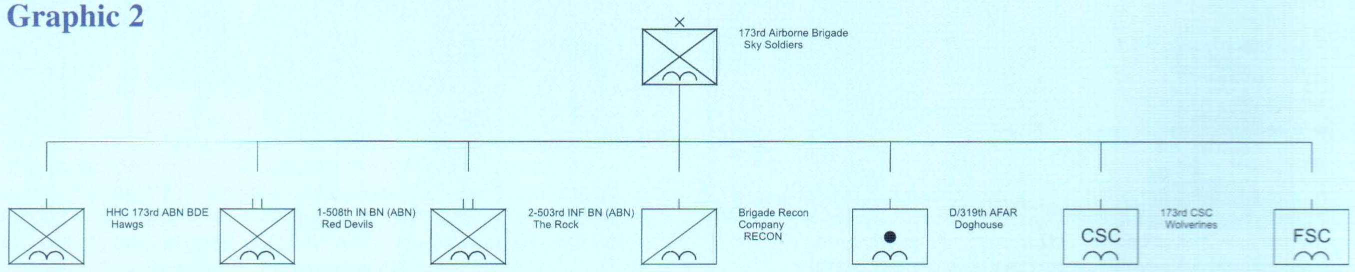
The "Red Devils" snipers are equipped with the M24 7.62mm Sniper Weapon System (SWS) fielded in 1988. Note the attached AN/PVS-10 Sniper Day/Night Sight, which provides the sniper with the capability to acquire and engage targets under both day and night conditions. The M24 SWS uses the Remington 700 receiver group, although the receiver has been adapted to take the .300 Winchester Magnum round. The stock is made of a composite of Kevlar, graphite and fibreglass bound together with epoxy resins, and it features an aluminum bedding block and adjustable butt plate.

(SFOR) in Bosnia-Herzegovina. The Strategic Reserve, a combined force comprised of U.S., Italian, Turkish, Polish, Romanian, and Dutch units, stood ready to respond if events warranted the reinforcement of that critical mission. On 1 October 1999, SETAF demonstrated its rapid response capability when the SETAF Infantry Brigade and the 1-508th ABCT executed Operation "Rapid Guardian", parachuting into southern Kosovo to show U.S. resolve and commitment to the KFOR peacekeeping mission. Two weeks later, the SETAF Infantry Brigade and the 1-508th ABCT deployed to Bosnia for Operation "Rapid Resolve", further demonstrating SETAF's rapid deployment capability. Later, in October 1999, SETAF demonstrated its ability to form a JTF when it was given the mission to be the JTF core of a major contingency planning operation, "Skilled Anvil". From October 1999 to February 2000, this JTF developed a comprehensive and executable war plan for use in potential crisis areas of the U.S. European Command area of responsibility.

On 12 June 2000, the SETAF Infantry Brigade was redesignated as the 173d Airborne Brigade "Sky Soldiers", thus continuing the proud legacy of the historic unit that was constituted 5 August 1917 as an infantry brigade and organized 25 August 1917 at Camp Pike, Arkansas, as an element of the 87th Division. The brigade's mission is to operate as a separate, independent brigade; to fall in on a division as an organic brigade; and to operate as the Army Forces component in a joint task force, thereby serving as European Command's only conventional airborne strategic response force for the European Theater.

On 25 January 2002, the Headquarters of the 2nd Battalion, 503rd Infantry (Airborne) "The Rock" was reactivated during a ceremony at Caserma Ederle. Since that date, Headquarters and Headquarters Company, A Company and B Company have received personnel and equipment, have conducted intensive training, and are now mission capable. The third rifle company, C Company, was mission capable by December 2002. The addition of a second airborne infantry battalion under the 173d Airborne Brigade provides SETAF with significantly more combat power for crisis response and rapid reaction missions throughout the European Command area of responsibility. The 173d Airborne Brigade "Sky Soldiers" includes the 1-508th Infantry (Airborne) "Red Devils"; 2-503rd Infantry (Airborne) "The Rock"; Headquarters and Headquarters Company "Hawgs"; 501st Forward Support Company "Atlas"; 173d Combat Support Company "Wolverines"; 173d Brigade Reconnaissance Company "RECON"; and Delta Battery, 319th Airborne Field Artillery Regiment "Doghouse" **(Graphic 2)**.

Graphic 2

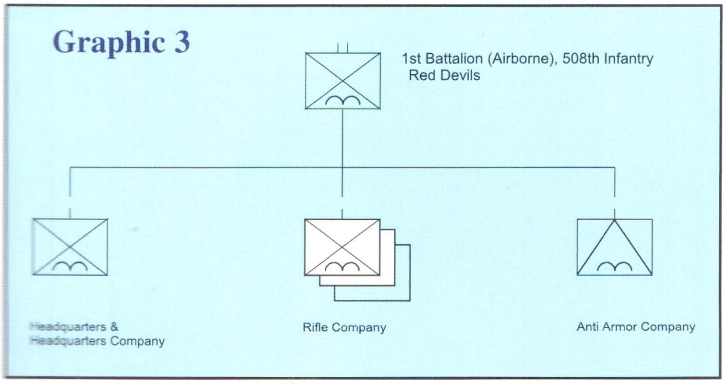


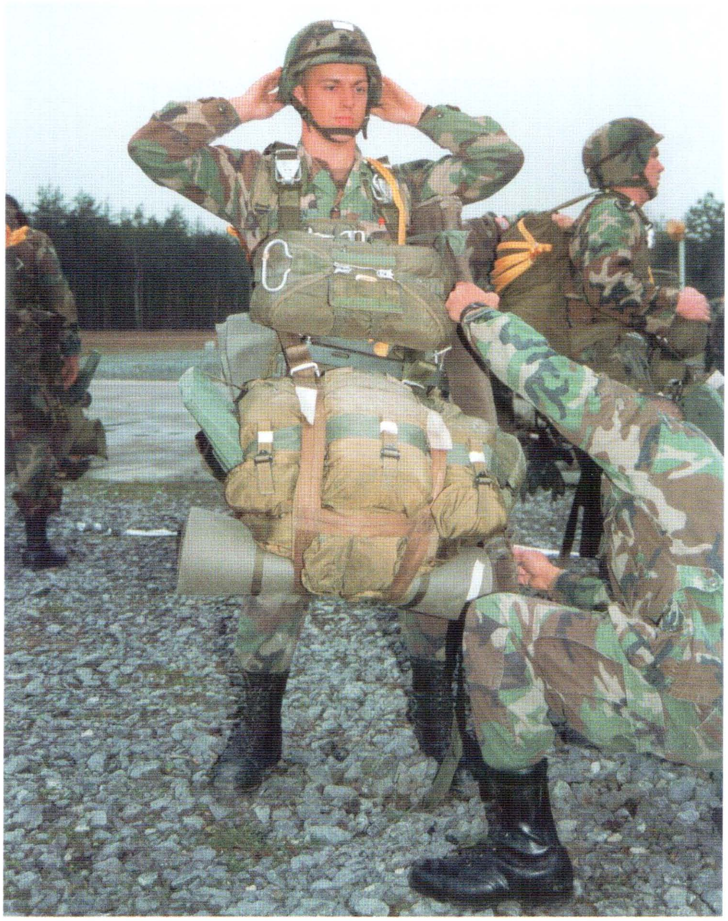
At a battalion aid station, a medic determines the severity of wounds at the pre-operation triage. Notice the stands to keep the casualties off the cold ground since contact with the ground can quickly sap all of casualties' warmth.

The 1st Battalion, 508th Infantry Regiment (Airborne) "Red Devils"

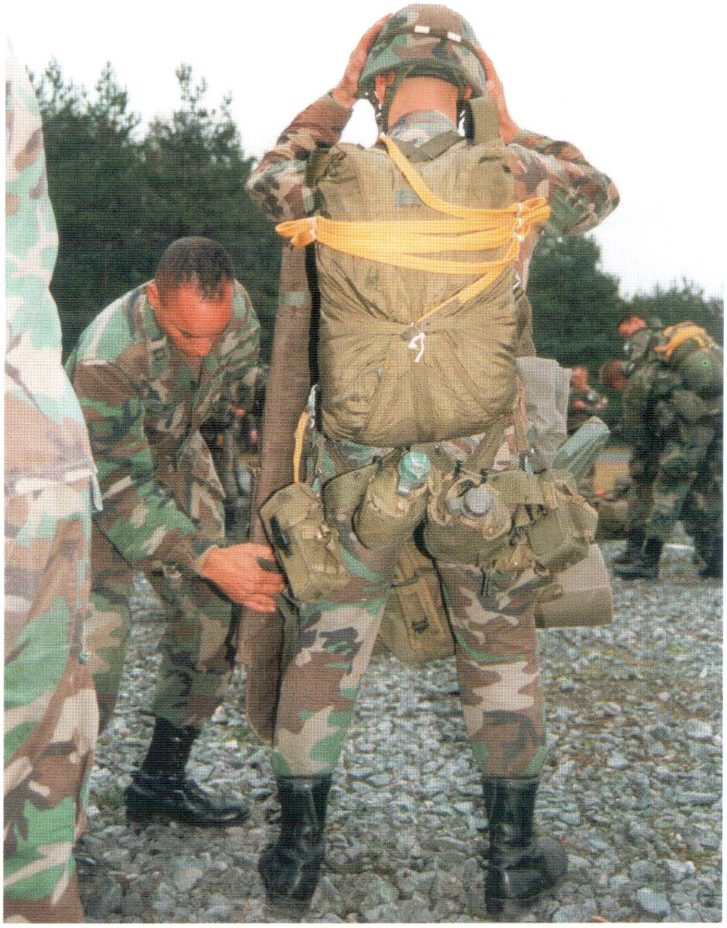
Let's take a closer look at one of the two identically organized airborne infantry battalions of SETAF's 173d Airborne Brigade. Since the 2nd Battalion, 503rd Infantry (Airborne) "The Rock" has not yet received all personnel and equipment, in the following section we will concentrate on the famous 1st Battalion, 508th Infantry (Airborne), nicknamed "Red Devils", which was activated on 20 October 1942 at Camp Blanding, Florida.

This battalion consists of a headquarters and headquarters company, three identically organized rifle companies and an anti-armor company (**Graphic 3**). The airborne infantry battalion serves many roles on the battlefield. Most often it engages in the close battle and may conduct raids or stay-behind operations as part of deep operations. The battalion may participate in rear battle as part of a tactical combat force. Also, due to their rapid deployability by air, airborne infantry units are ideally suited for executing strategic contingency plans and establishing lodgements. Limited visibility is the basis for airborne infantry battalion operations. Limited visibility operations strike the defender when the range of his weapons and the mutual support between his positions are reduced.





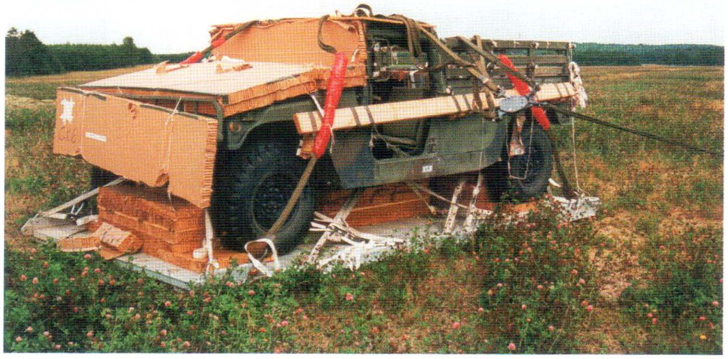
A fully equipped paratrooper with his combat load. He wears the manually activated reserve parachute, fixed with D-rings to the harness, and the ALICE rucksack. Airborne troopers typically jump into combat with loads of between 36 and 55kg (79 and 121 lb), which they must carry into battle.



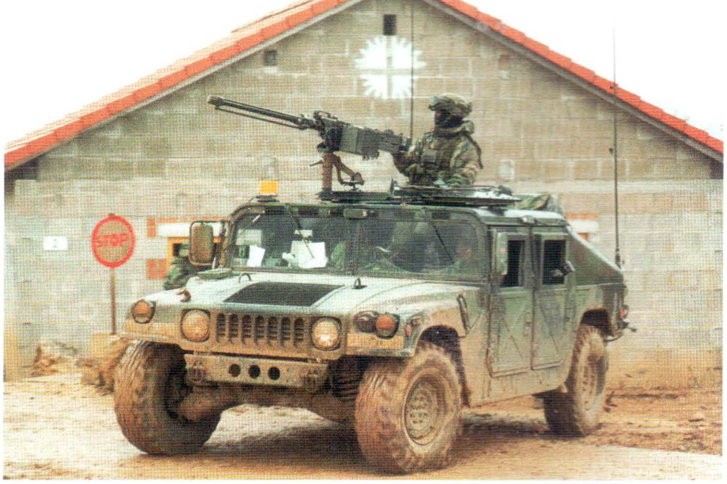
The paratrooper seen here wears the regular T10M parachute. He is also equipped with a 5.56mm M4A1 Carbine, which is stowed in a special M1950 jump case. The parachutist's pad provides limited rear impact protection for the parachutist when jumping. It is mounted on the inside rear of the helmet and used in conjunction with the Parachutist Helmet Retention Strap.

The easiest method to transport wheeled vehicles and equipment to the drop zone is the heavy drop out of cargo aircraft. A HMMWV secured on a dropping platform leaves a C-130 Hercules at dawn over the Grafenwöhr DZ as part of Exercise "Vigilant Lion". This photo dramatically illustrates the importance of tightly securing a vehicle onto the dropping platform when it is being delivered air dropped.

The platform carrying a M1097 HMMWV descends to the earth after being dropped over Grafenwöhr DZ from a C-130 Hercules.



The M1097 HMMWV is not secured directly to the dropping platform but rests on a stack of shock-absorbing pallets under the main body and both axles. These measures prevent the vehicle from being damaged by the drop. The windscreen and the front lights were also covered in case the glass is smashed on impact with the ground.

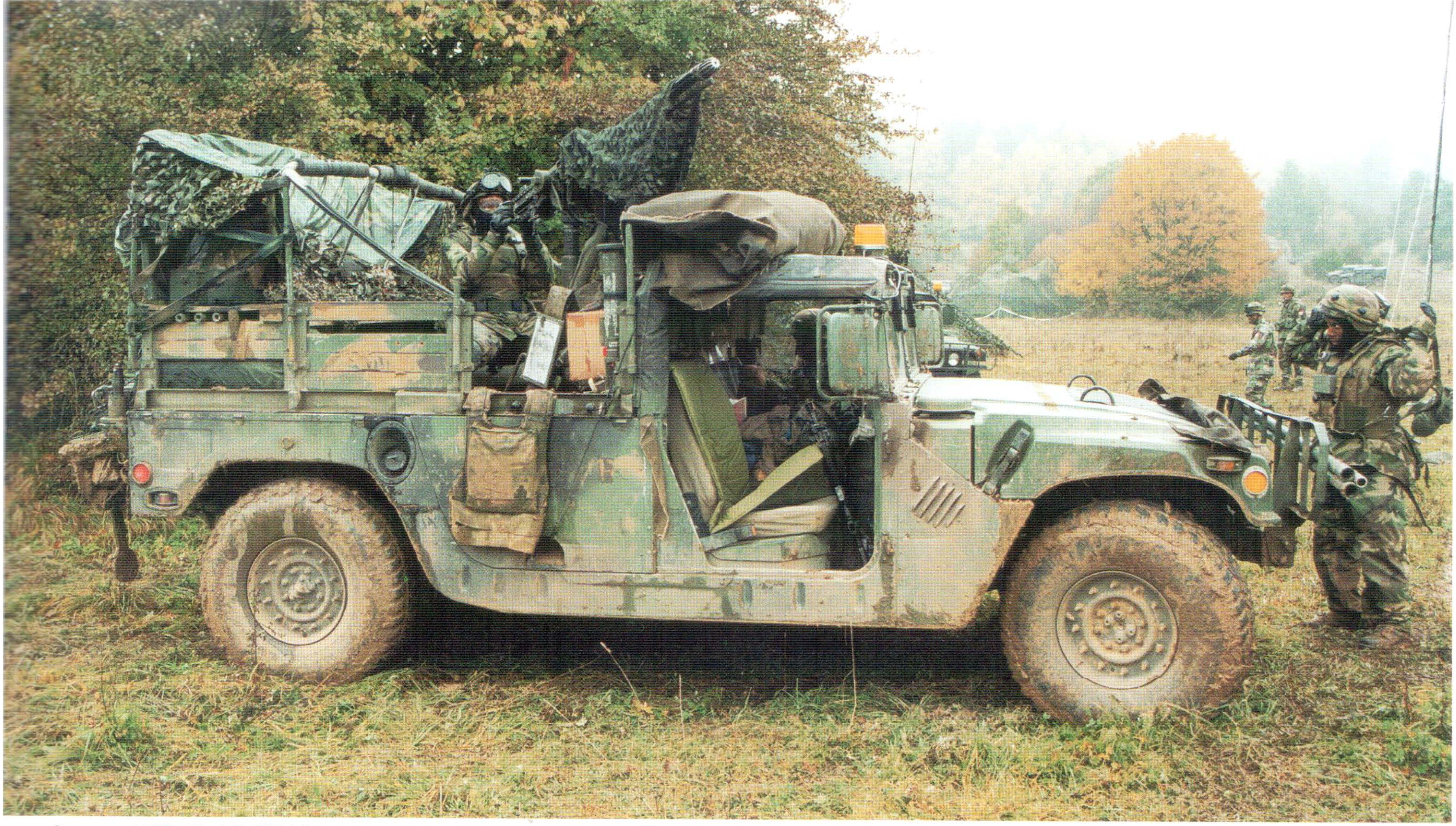


SETAF's Brigade Reconnaissance Company usually uses the armored M1025 HMMWV. Depending on the mission, the 3.7-ton M1025 can be equipped with the M2 cal.50 machine gun or the Mk19 Mod 3 40mm Grenade Machine Gun. Note the Mobile Independent Target System (MITS) on the roof and the MILES sensor straps over the windscreen.

The Headquarters & Headquarters Company is divided into a battalion headquarters and the headquarters company. The battalion headquarters co-ordinates and controls all battalion activities and consists, therefore, of numerous different platoons, sections and squads. The "Red Devils" are commanded by a lieutenant colonel who forms the battalion command section together with the executive officer and the battalion command sergeant major. Like other U.S. Army battalions, the "Red Devils" have their own S-1 (Administrative), S-2 (Intelligence), S-3 (Operations), and S-4 (Supply & Support) sections, which work together very closely and are mostly equipped with HMMWVs and M101A1 cargo trailers. he communication platoon, which is equipped with three HMMWVs and a M101A1 cargo trailer, is responsible for the maintenance and repair of the innumerable battalion computer and communication systems. It is also responsible for establishing and maintaining an FM retransmission station as required.

The battalion's mortar platoon provides the most responsive indirect fire available to the battalion. The platoon's mission is to provide close and immediate fire support to the maneuver units. In addition to supporting its parent battalion, the mortar platoon can support other units. The role of mortar units is to deliver deadly suppressive fire to support maneuver, especially against dismounted enemy infantry. Mortar units also fire smoke missions, mark targets, and provide point battlefield illumination.

SETAF's Air Defense Artillery (ADA) element composed of the 173d Combat Support Company "Wolverines", which are part of the 173d Airborne Brigade "Sky Soldiers". This M1097 HMMWV is used as a carrier for the FIM-92A Stinger short-range air defense missile. The Stinger is a man-portable, shoulder-fired guided missile system that enables SETAF's paratroopers to effectively engage low-altitude jet, propeller-driven and helicopter aircraft.

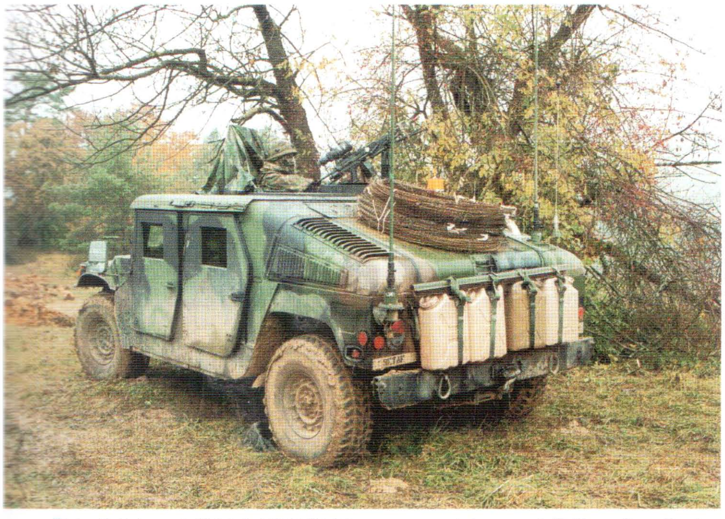


Some of SETAF's M1097 HMMWVs are equipped with a cal.50 M2 machine gun mounted on the cargo compartment. Note the cushion on the intermediate bows and the body armor hanging on the side of the vehicle. This paratrooper secures the 173d Airborne Brigade Tactical Operations Center (TOC) during "Agile Lion 2002".

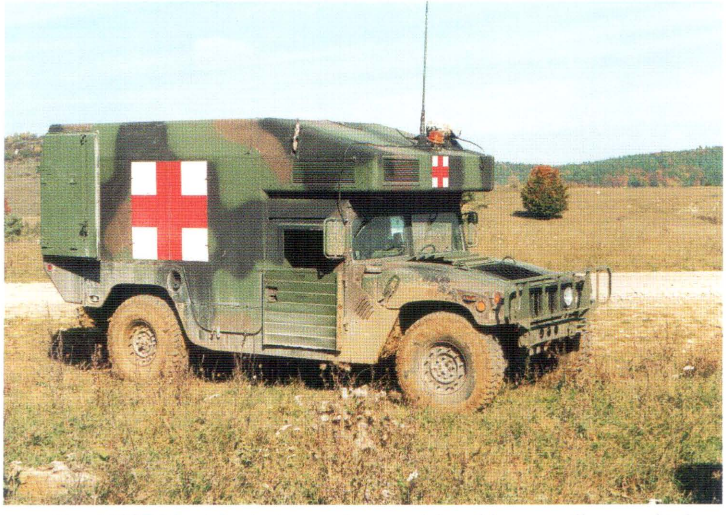
Mortar fire inhibits enemy fire and movement, thus allowing friendly forces to maneuver into a position of advantage. Effectively integrating mortar fire with dismounted maneuver is the key to successful combat at the rifle company and battalion level. The battalion's mortar platoon is organized into a platoon headquarters with two HMMWVs and four mortar squads with a HMMWV and an 81mm M252 mortar.

The medical platoon provides unit-level medical support for the battalion. It collects, triages, and treats patients and then either evacuates them or returns them to duty. The medical platoon establishes and applies preventative medicine programs aimed at preventing disease and illness. It is organized into the platoon headquarters with a HMMWV, a treatment squad with two HMMWVs and two M1102 cargo trailers, two ambulance squads with two M996 HMMWV ambulance carriers, and a combat medic section. The RECON platoon, with its platoon headquarters and the three RECON squads, conducts reconnaissance and security operations for the battalion and is not equipped with vehicles. Of course, the 1-508th INF BN (ABN) also has a unit ministry team (UMT) with a chaplain who provides religious services and soldier welfare ministries.

The HHC company headquarters has two HMMWVs and one M101A1 cargo trailer and is supervised by the HHC commander, normally a captain, and the first sergeant. It provides command and control, administrative and supply services, and co-ordinates security for the company. The HHC maintenance section, which is composed of a HMMWV, M35A3 truck and two cargo trailers, performs unit maintenance for all battalion elements. The responsibility for operator and crew maintenance remains with the companies.



This 5.5-ton M1114 HMMWV, powered by a 6.5-liter 8-cylinder turbo-charged Detroit Diesel engine with 190 HP, belongs to SETAF's 13th Military Police Company based in Vicenza, Italy. The armament consists of a 5.56mm M249 Squad Automatic Weapon equipped with a night vision device. Note the concertina wire and the water and fuel canisters stowed on the rear of the HMMWV.



The M997 Maxi-Ambulance is capable of transporting up to four litter patients, eight ambulatory patients or a combination of litter and ambulatory patients. Additionally, medical personnel, equipment and a driver can be accommodated in the vehicle. The 4.1-ton M997 is powered by a 6.2-liter 8-cylinder liquid-cooled Detroit Diesel engine with 150 HP and has a cruising range of nearly 443km (275 miles).

Since the stowage area on the HMMWV's cargo compartment is quite limited, most of the soldiers attach their personnel equipment, like bags and rucksacks, to the troop seat assemblies. Note the camouflaged canvas cover over the cargo area.

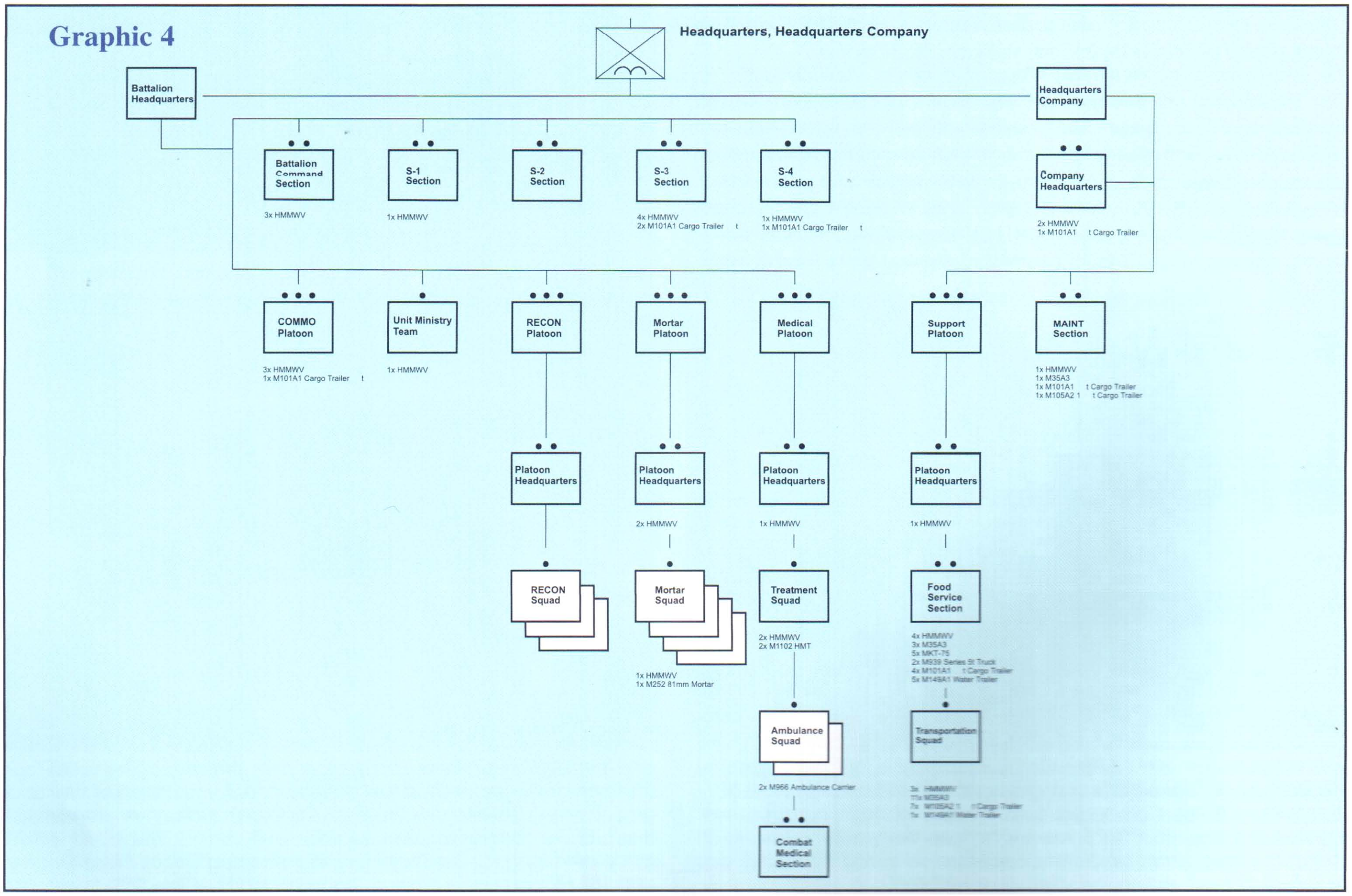
The battalion's support platoon is organized into a platoon headquarters with a HMMWV, a mess section and a transportation squad. The food service section provides food service support to all battalion elements and to the D/319th AFAR "Doghouse" with its four HMMWVs, three M35A3 trucks, two M939 Series trucks, five MKT-75 Mobile Field Kitchen Trailers, five M149A1 water trailers, and four M101A1 cargo trailers. The transportation squad, which is organized and equipped to transport ammunition, supplies, water, and fuel to the companies and to move soldiers by organic vehicles, has three HMMWVs, eleven M35A3, seven M105A2 cargo trailers, and a M149A1 water trailer in the vehicle park **(Graphic 4).**

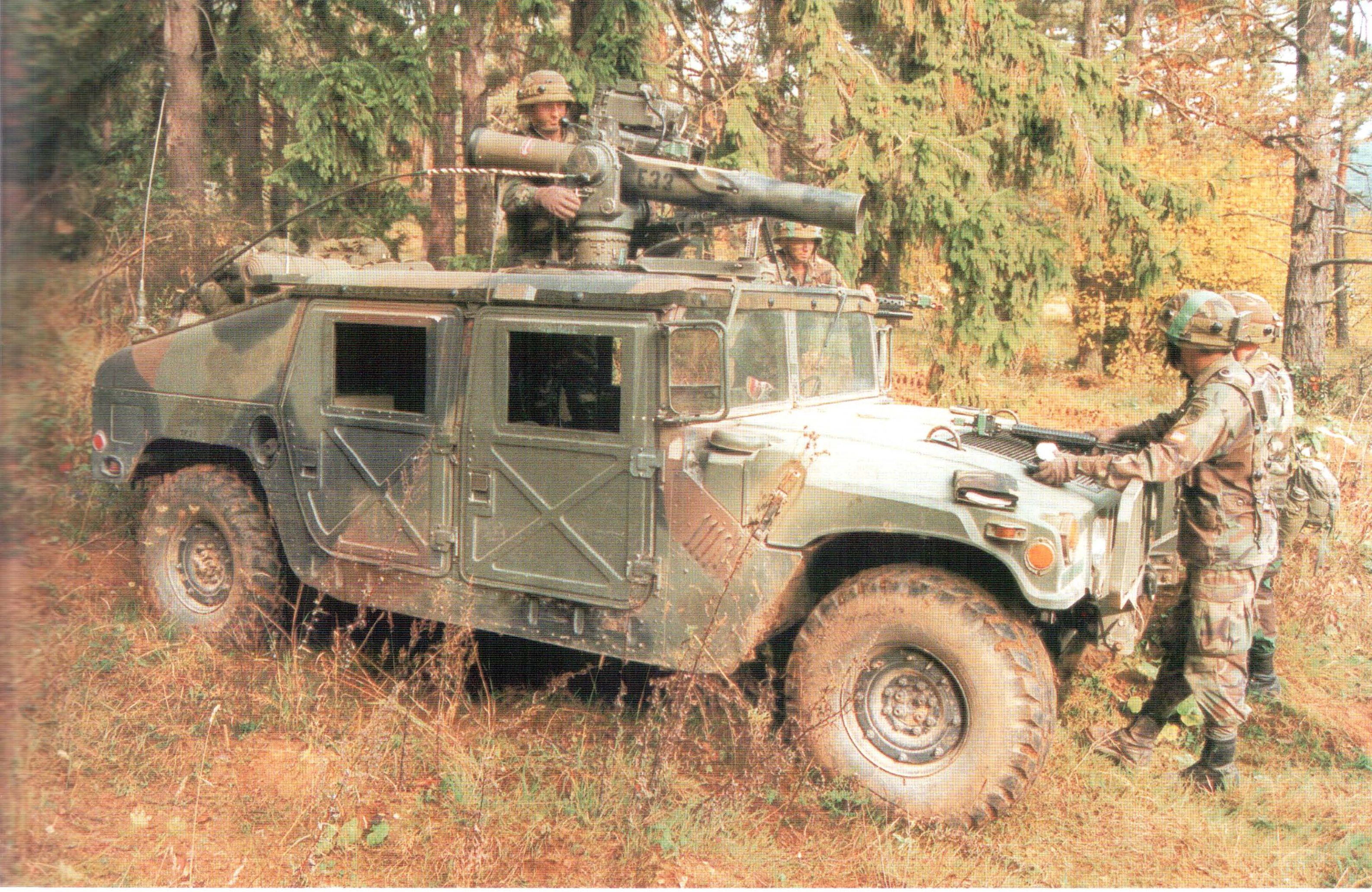
Each M966 HMMWV carries six spare missiles stowed inside a rack in the rear cargo compartment. It's obvious the gunner is in a vulnerable position when he is aiming the TOW-2B missile. After firing the missile, the gunner must keep the cross hairs of the sight centered on the target to ensure a hit. The system will operate in all weather conditions in which the gunner can see a target throughout the missile flight by using either a day or night sight.

The mission of the rifle company is to close with the enemy by means of fire and maneuver in order to destroy or capture him or repel his assaults by fire, close range combat and counterattack. The three rifle companies are organic to the airborne infantry battalion and fight as part of the battalion. The rifle company is normally employed under the control of the battalion commander in the most forward part of the battalion's operational area. They fight as single elements or they are assigned missions for the subordinate platoons and squads. The battalion headquarters supports the company on a mission basis with 81mm M252 mortar fire, reconnaissance, medical, supply, and transportation support. The anti-armor company provides heavy anti-tank fire on a mission basis.

Each rifle company is organized into a company headquarters, three rifle platoons and a mortar section. The company headquarters consists of

Graphic 4


Headquarters, Headquarters Company
Battalion Headquarters
Headquarters Company
Battalion Command Section
3x HMMWV
S-1 Section
1x HMMWV
S-2 Section
S-3 Section
4x HMMWV
2x M101A1 Cargo Trailer t
S-4 Section
1x HMMWV
1x M101A1 Cargo Trailer t
Company Headquarters
2x HMMWV
1x M101A1 t Cargo Trailer
COMMO Platoon
3x HMMWV
1x M101A1 Cargo Trailer t
Unit Ministry Team
1x HMMWV
RECON Platoon
Mortar Platoon
Medical Platoon
Support Platoon
MAINT Section
1x HMMWV
1x M35A3
1x M101A1 t Cargo Trailer
1x M105A2 1 t Cargo Trailer
Platoon Headquarters
Platoon Headquarters
2x HMMWV
Platoon Headquarters
1x HMMWV
Platoon Headquarters
1x HMMWV
RECON Squad
Mortar Squad
1x HMMWV
1x M252 81mm Mortar
Treatment Squad
2x HMMWV
2x M1102 HMT
Food Service Section
4x HMMWV
3x M35A3
5x MKT-75
2x M939 Series 5t Truck
4x M101A1 t Cargo Trailer
5x M149A1 Water Trailer
Ambulance Squad
2x M966 Ambulance Carrier
Transportation Squad
3x HMMWV
11x M35A3
7x M105A2 1 t Cargo Trailer
1x M149A1 Water Trailer
Combat Medical Section



The 3.7-ton M966 HMMWVs of the Infantry Battalion Anti-Armor Company are the only anti-armor elements of the 173d Airborne Brigade. The vehicles are equipped with basic armor and a launcher for the M220 TOW-2B ATGM mounted on the roof of the vehicle. The weapons platform can be traversed 360 degrees and the launcher elevated to 20 degrees and depressed to 10 degrees.

the company commander, the executive officer, the first sergeant, the supply sergeant, the NBC NCO, the armorer, and the radio telephone operator (RATELO). It provides the command, control, administration, and logistical support required for unit operations. The rifle company commander, usually a captain, is responsible for the training, maintenance and tactical employment of the company. The first sergeant is responsible for overseeing administrative and logistic functions within the company, such as re-supply and casualty evacuation operations, while in the barracks he is responsible for coaching, teaching and mentoring other NCOs within the company.

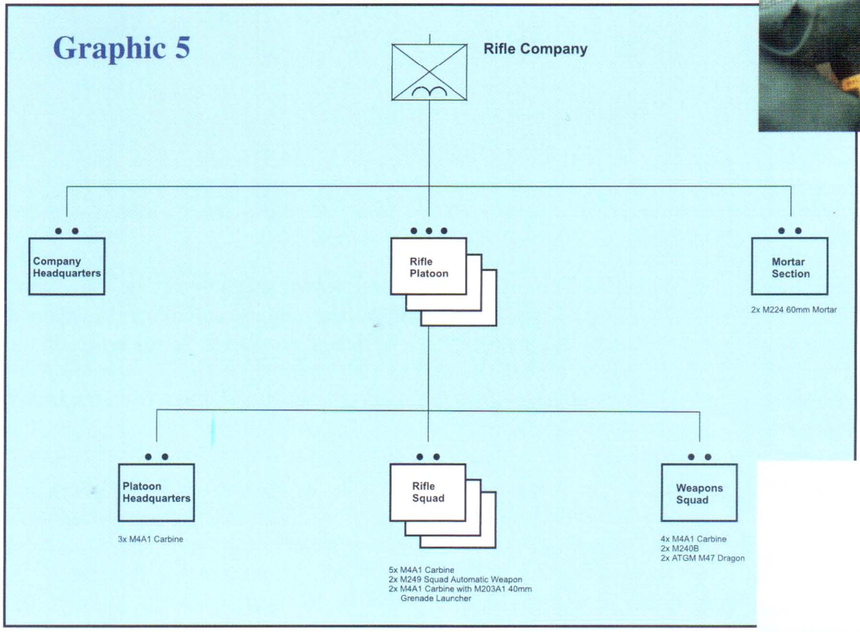
The crew of this M966 HMMWV stowed their personal equipment at the rear of the vehicle. All M966 are equipped with Single Channel Ground and Airborne Radio Systems (SINCGARS), which was introduced in the 1990s. The warhead of the 1.22-meter (4-ft) long TOW-2B weighs 12.4kg (27lb) and penetrates up to 800mm (32 inches) of armoured steel.

The rifle platoons have a platoon headquarters, three rifle squads and a weapons squad. The training and tactical employment of the rifle platoon is directed by the rifle platoon headquarters, which is made up of the platoon leader, the platoon sergeant and a radio telephone operator. Each of the rifle companies has a fire support team attached to it from the Direct Support (DS) Field Artillery (FA) battalion. This team provides each rifle platoon with a two-soldier forward observer (FO) party – an FO and his RATELO. The forward observer acts as the eyes of the field artillery and mortars and works for the rifle platoon leader. The forward observer's main responsibilities are to locate targets and to call for and adjust indirect fire support. He must be familiar with the terrain that the platoon is operating in and the tactical situation. He must know the mission, the concept, and the platoon's scheme of maneuver and priority of fires. The RATELO's main duties are to set up, operate, and maintain the FO party's communications equipment. At times, he must also perform the duties of the FO for the platoon.

The rifle squad is the fundamental fighting element of the rifle platoon. It is organized into two fire teams that are commanded by a squad leader. The rifle squad has nine soldiers, the squad leader, two fire team leaders, two automatic riflemen, two riflemen, and two grenadiers. Their armament consists of five 5.56mm M4A1 Carbines, two M4A1 Carbines with M203A1 40mm Grenade Launchers and two 5.56mm M249 Squad Automatic Weapons. There are two 7.62mm M240B machine gun teams and two ATGM M47 Dragon anti-armor teams in the weapons squad that provide the platoon with tripod-supported machine gun and anti-armor fire. Currently SETAF is fielding the new Javelin ATGM as a replacement for the M47 Dragon. The weapons squads are employed one per rifle platoon or by the company commander in a general support role for the entire company. Each machine gun team and anti-armor team consists of a gunner and an assistant gunner.

The M119A1 is a lightweight, air mobile, parachute air droppable, or towable 105mm howitzer with an average crew of seven soldiers. It is far more lethal than the M101/M102 howitzer it replaced. This photo shows a M119A1 howitzer of D Battery, 319th Airborne Field Artillery Regiment during a recent live fire exercise at Grafenwöhr Training Area, Germany. The howitzer's maximum range is 14km (9 miles) with conventional ammunition and 19.5km (12 miles) with Rocket Assisted Projectiles (RAP).

The mortar section operates under direct control of the rifle company headquarters but can, as the mission dictates, be attached to a rifle platoon. This section with two M224 60mm mortars may be employed in the indirect fire or direct fire mode to provide limited immediate fire support to the rifle company **(Graphic 5).**



The anti-armor company provides anti-armor fire support for the rifle companies. This company is normally employed under control of the airborne infantry battalion. It is organized with a company headquarters with two HMMWVs and five anti-armor platoons, which consist of a platoon headquarters with a HMMWV and two anti-armor sections. Each anti-armor section has two M966 HMMWVs equipped with the ATGM M220A2 TOW-2 with a maximum range of 3,750 meters (4,100 yards), a cal.50 M2 machine gun, a M249 SAW, and a Mk.19 MOD 3 40mm grenade machine gun. It provides long range direct anti-armor fire against tanks, anti-armor vehicles and other point targets.

The company headquarters operates as a tactical command and control, administrative support and logistical support headquarters. The company headquarters command element will be positioned for the most effective control of the company in the combat area. The anti-armor platoons are normally employed under the control of one person (usually the company commander within the battalion) who plans and directs anti-armor fire in concert with the battalion commander's scheme of maneuver.

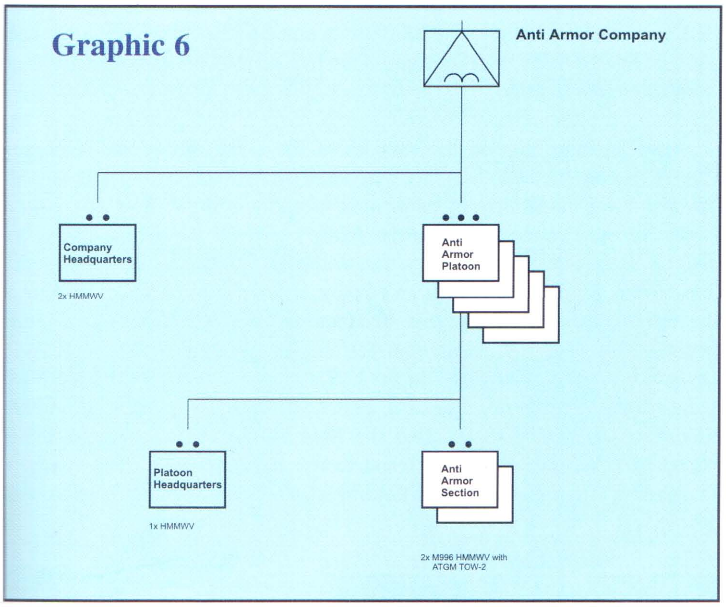
The M119A1 Lightweight Howitzer gunner uses the M137A1 Panoramic Telescope with the M187 Mount. The howitzer was originally designed, developed and produced by Royal Ordnance, Nottingham, England as the L118/L119 British Light Gun. In the L118 configuration, the weapon uses separate loading 105mm Abbott-type ammunition. The L118 served with distinction during the Falkland Island conflict. The L119 is identical to the L118 except for the cannon tube, which in configured to fire all NATO standard 105mm semi-fixed ammunition.

Because the storage capacity inside the HMMWV is quite limited, SETAF`s M1097A1s received a special storage rack mounted on top of the driver's compartment. Note the infrared light between the front lights and the Mobile Independent Target System (MITS), which is a part of the Multiple Integrated Laser Engagement System.

This M1097A1 is used as a Fire Direction Center (FDC) by D/319th AFAR firing platoon, which has six howitzer sections, each being equipped with two M1097 HMMWVs and a 105mm M119A1 Lightweight Howitzer. Note the camouflaged DTRACS antenna on top of the driver's compartment and the four SINCGARS antennas.

Mortars are the infantry company and battalion commanders' personal "vest-pocket" artillery. Unlike big guns, which traditionally require meticulous procedures for plotting fire in advance, observing the fall of shots and adjusting fire, mortars are "shoot and scoot" weapons. The M252 mortar has a crew-removable breech plug and firing pin. Note the covered Blast Attenuation Device (BAD) attached to the muzzle of the mortar.

The anti-armor company operates in conjunction with infantry, armor and other elements of the combined arms team. The function of the anti-armor platoon headquarters is to direct the training, maintenance and tactical employment of the platoon. During combat, the headquarters will plan, coordinate and integrate the platoon's fire to fit the company tactical plan. At times, a platoon or a section may be attached to a rifle company **(Graphic 6).**



The M966 HMMWV TOW-2 Missile Carrier

The 3.7-ton M966 is one of the TOW-2 Missile Carrier configurations of the HMMWV family and the only anti-armor vehicle of the 173d Airborne Brigade. The vehicle, which is equipped with basic armor and a TOW-2B launcher mounted on the roof of the vehicle, is used to transport and launch TOW-2B missiles to defeat armoured vehicles. The weapons platform can be traversed 360 degrees and the launcher elevated to 20 degrees and depressed to 10 degrees. The vehicles can climb 60% slopes and traverse a side slope of up to 40% fully loaded. It can ford hard-bottom water, crossing up to 76cm (30 inches) without a deep water fording kit and up to 152cm (60 inches) with the kit. The M1036 is equipped with the self-recovery winch that can also be used to recover like systems. The 6.2-liter (1.6-gallon) naturally-aspirated 8-cylinder Detroit Diesel engine with 150 HP provides the M966 HMMWV a maximum speed of 105km/h (65mph) and a cruising range of 515km (320 miles).

The Hughes BGM-71A Basic Tube-launched Optically tracked Wire-guided (TOW) Anti-Tank Guided Weapon (ATGW) entered operational service with the U.S. Army in 1970 for use from ground, vehicle and helicopter mounts. It is designed to defeat armored vehicles and other targets such as field fortifications from ranges up to 3,750 meters (4,100 yards). After firing the missile, the gunner must keep the cross hairs of the sight centered on the target to ensure a hit. The system will operate in all weather conditions in which the gunner can see the target throughout the missile flight by using either a day or night sight.

Since its fielding in 1970, the TOW has continually been improved to meet the standard. The BGM-71F TOW-2B, the newest version of the TOW missile, provides additional capability against future armored threats. The TOW-2B, which entered production in late 1991, incorporates new fly-over, shoot-down technology. It was designed to attack targets from the top. The missile's trajectory places the missile slightly above the target when its two warheads explode downward. The TOW has seen extensive combat use in a number of conflicts including Angola, Chad, the 1973 Yom Kippur War, Lebanon, the Iran-Iraq War, the Thai-Cambodian border skirmishes, the Thai-Laotian border skirmishes, the Vietnam War, and the 1991 Gulf War. In the latter conflict, a number of countries used the TOW system. The U.S. Army and the U.S. Marine Corps alone shipped some 50,000 rounds into the theatre of operations, of which over 3,000 (primarily TOW-2 and TOW-2A) were fired at a wide variety of targets varying from T-72 MBTs to machine gun emplacements and individual snipers. In the Battle of Khafji, counterattacking Saudi Arabian TOW gunners alone destroyed 46 armored vehicles, while U.S. Marine Corps Cobra helicopters that were assisting helped to destroy a further 20 tanks and APCs.

Late in 1996, Hughes Aircraft stated that there were over 15,000 TOW launchers (including helicopters) deployed in the world, with current production models being the TOW-2A and TOW-2B. Total production has now passed 600,000 missiles and is scheduled to continue through the remainder of this century.

D-Battery, 319th Airborne Field Artillery Regiment "Doghouse"

Now that we have examined one of the two 173d Airborne Brigade infantry battalions, we should not forget SETAF's field artillery element. The mission of Delta Battery, 319th Field Artillery Regiment (Airborne) "Doghouse" is to destroy, neutralize and suppress the enemy with cannon fire. The battery operates as a tactical unit and will be positioned for the most effective response to support maneuver units, commensurate with the terrain, combat mission and responsiveness to the higher headquarters. The battery is organized into a battery headquarters with two HMMWVs, a M35A3 truck and two trailers, a battery maintenance section, a Position Azimuth Determining System (PADS) section, a firing platoon, and the fire support element.

The firing battery headquarters is responsible for reconnaissance, positioning and conduct of the firing battery. It commands, controls and

The "Golden Lions" are ready to enter a CH-47D Chinook during a training jump in the Grafenwöhr Training Area, Germany. Despite the heavy load, it takes only minutes for all the paratroopers to get settled inside the helicopter.

When rapid repositioning is required, the commanders can call in UH-60L Black Hawk or CH-47D Chinook transport helicopters. Only seconds after the helicopter wheels touched the ground, all paratroopers have left the Black Hawk and are securing the area with their personal weapons.

supervises the howitzer sections, the fire direction center and the ammunition section. The battery maintenance section performs maintenance for all organic battery elements with its M35A3 truck and the M105A2 cargo trailer. The PADS (Position and Azimuth Determining System) team, which has a HMMWV, provides survey data for the battery. The mission of field artillery survey is to provide a common grid that will permit the massing of fire, delivery of surprise observed fire, delivery of effective unobserved fire, and transmission of target data from one unit to another to aggressively neutralize, destroy or suppress enemy targets. The establishment of a common grid and the single operational datum within the common grid is a command responsibility.

The firing platoon consists of the platoon headquarters, the fire direction center, six howitzer sections, and the ammunition section. The platoon headquarters is responsible for the training and tactical employment of the firing platoon. The technical fire control is provided by the fire direction center, which also computes firing data to load, aim and fire the howitzers. It is therefore equipped with two HMMWVs and two M1101 cargo trailers. Each howitzer section is made up of two M1097 HMMWV prime movers and a 105mm M119A1 Light Howitzer to engage the enemy with indirect fire. The ammunition section re-supplies the six howitzer sections with ammunition and has three M939 series trucks and three M332 trailers. The fire support element, which has two HMMWVs, is organized into three fire support teams (FIST) and a combat observation and lasing team (COLT), each of which is equipped with a HMMWV **(Graphic 7).**

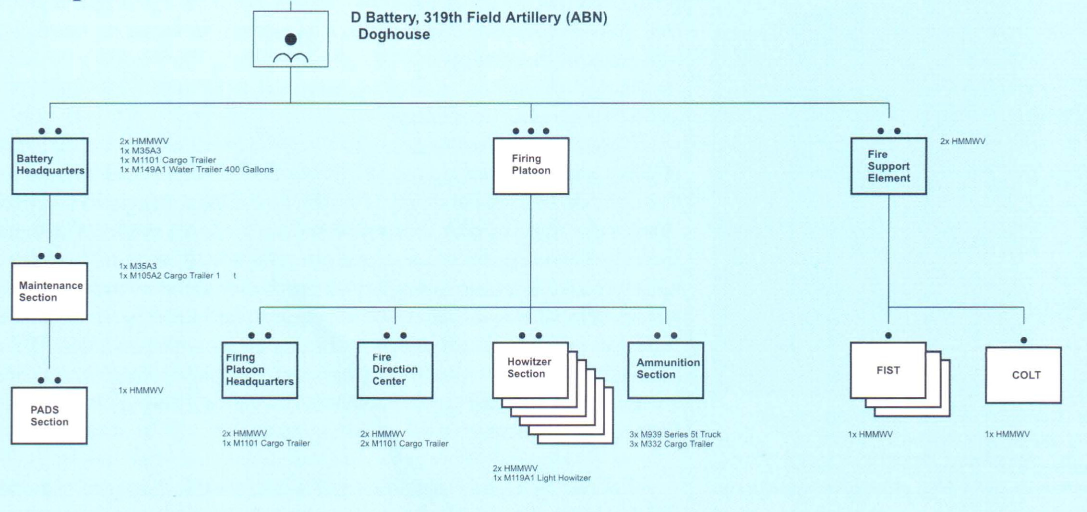
The M119A1 105mm Lightweight Howitzer

The M119A1 is a lightweight, air mobile, air droppable (by parachute) or towable howitzer with an average crew of seven soldiers. It provides direct and indirect fire support to highly mobile light infantry or airborne infantry units. It was originally designed, developed and produced by Royal Ordnance, Nottingham, England as the L118/L119 British Light Gun. In the L118 configuration, the weapon uses separate loading 105mm Abbott-type ammunition. The L118 served with distinction during the Falkland Islands conflict. The L119 is identical to the L118 except for the cannon tube, which is reconfigured to fire all NATO standard 105mm semi-fixed ammunition.

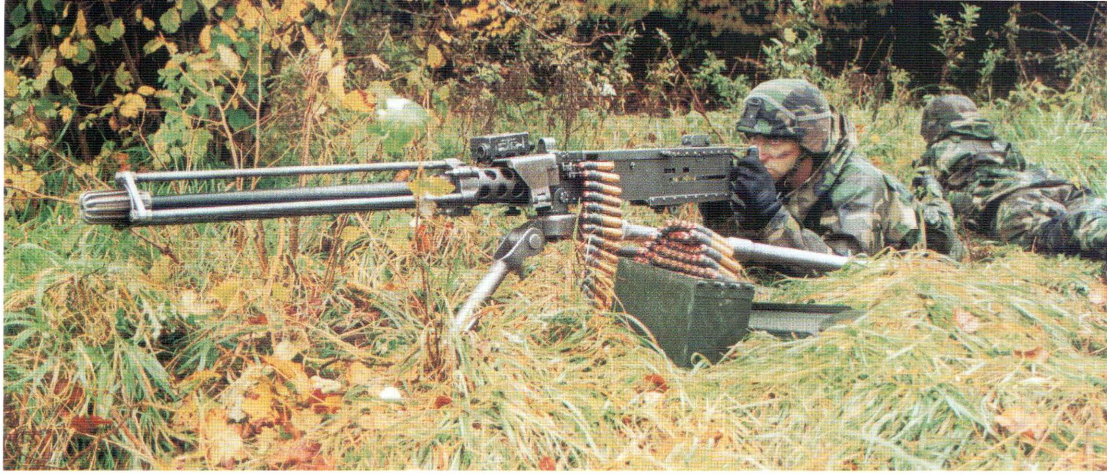
Due in large part to the success of the L118 during the Falkland Islands campaign, the U.S. Army purchased operational testing weapons to determine the feasibility of using this weapon in the U.S. Army's new Light Division concept. Key in the Army's evaluation was the ability to airlift an entire division artillery unit within the strict constraints of light division air transport. The M119A1 easily met this critical challenge. Once the operational questions were satisfactorily answered, the U.S. Army negotiated both a production contract and license agreement with Royal Ordnance in 1987. Deliveries to the U.S. Army commenced in December 1989 to the 7th Infantry Division, Fort Ord, California. Since the initial fielding, it has been reclassified the M119A1 and fielded to the 82nd Airborne Division in July 1991 and to the 101st Airborne (Air Assault) Division in August 1992. Army fielding of the M119A1 was completed in 1995.

While the original design of the L119 met or exceeded all the operational requirements, the U.S. Army has carefully selected certain components for redesign to improve both maintainability and safety. In addition, the U.S. Army has an ongoing system improvement program (SIP). Some of the more significant changes that have been incorporated into current production include a U.S. standard digital fire control system, increased low-temperature capability, a simplified tail light assembly, improved tail access cover, and reduced maintenance on the elevating clutch.

Graphic 7


D Battery, 319th Field Artillery (ABN)
Doghouse
Battery Headquarters
2x HMMWV
1x M35A3
1x M1101 Cargo Trailer
1x M149A1 Water Trailer 400 Gallons
Maintenance Section
1x M35A3
1x M105A2 Cargo Trailer 1 t
PADS Section
1x HMMWV
Firing Platoon
Firing Platoon Headquarters
2x HMMWV
1x M1101 Cargo Trailer
Fire Direction Center
2x HMMWV
2x M1101 Cargo Trailer
Howitzer Section
2x HMMWV
1x M119A1 Light Howitzer
Ammunition Section
3x M939 Series 5t Truck
3x M332 Cargo Trailer
Fire Support Element
2x HMMWV
FIST
1x HMMWV
COLT
1x HMMWV

This soldier secures the mortar platoon of the 2nd Battalion, 503d Infantry (ABN) "The Rock" with his belt-fed, recoil-operated, air-cooled .50-caliber Browning machine gun mounted on a tripod. It has a cyclic rate of fire of 550 rounds per minutes and a maximum effective range of 2,000 meters (2,186 yards). Note the attached Multiple Integrated Laser System II and the blast device.



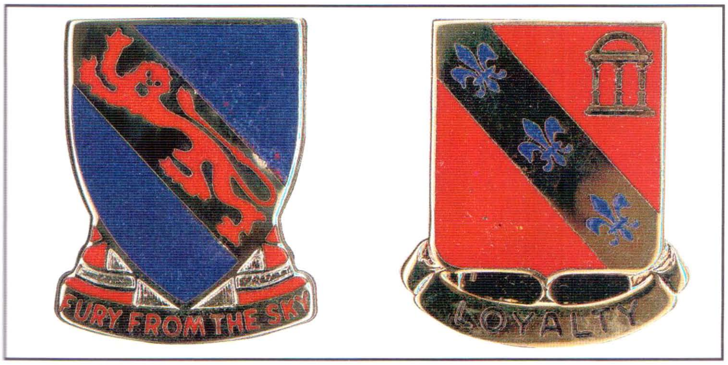
The M119A1 Lightweight Howitzer can be quickly moved and employed to provide maximum firepower with a minimum of combat loaded weight. It also provides a low silhouette and requires no recoil pit. It consists of the recoil mechanism, carriage, fire control instruments (including M137A1 Panoramic Telescope, M187 telescope mount & quadrant, M186 direct fire mount and M90A2 straight telescope), breech mechanism assembly, cannon, and cradle. The M119A1 Howitzer has an increased range of 14km (9 miles) with conventional rounds and 19.5km (12 miles) with Rocket Assisted Projectiles (RAP), and it is far more lethal than the M101/M102 Howitzer it replaced. It has a maximum rate of fire of six rounds per minute for two minutes and a sustained rate of fire of three rounds per minute for thirty minutes, and it can fire day and night in all types of environments.

The 2,050.3-kg (4,520-lb) howitzer can be emplaced by a crew of seven within three minutes and by a reduced crew in four minutes, and it can be displaced in three minutes. The prime mover for the gun is the heavy HMMWV variant M1097. The howitzer is air transportable with its basic load of ammunition by means of the UH-60L Black Hawk helicopter and is dual-lift capable with the CH-47D Chinook. The easiest method to transport the M119A1 howitzer and its M1097 prime mover into a drop zone (DZ) is the heavy drop out of cargo aircraft like the C-130 or the C-141. To accomplish this, the howitzer and the prime mover are secured on special dropping platforms to prevent damage from the impact. The M119A1 will reach the end of its service life around 2008.

The Future of SETAF is Today

Since SETAF is the organization of choice when it comes to responding to crises and contingencies anywhere within the U.S. European Command's AOR, we will definitely see this famous unit in action in the future . . . and that future is now. In late February 2003, 1,800 soldiers assigned to the Southern European Task Force received orders to deploy to the Central Command (CENTCOM) area of responsibility (AOR) to support the global war on terrorism and to prepare for future contingencies as may be directed. As this article nears publication, the 173d Airborne Brigade is deployed in Operation "Iraqi Freedom" in Iraq and have taken part in the capturing and securing of two major northern cities, Mosul and Kirkuk. This is the first time the unit has been involved in a war since it was deactivated following extensive action in Vietnam.

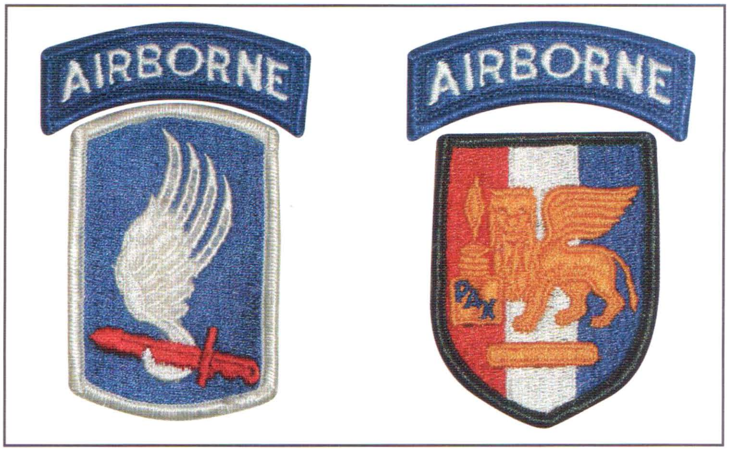
The author would like to thank CPT Steven Nettleton and MSG John Cavanaugh from the VIPER Combat Camera Team, CPT Mark Van Hout from the CMTC PAO, LTC Collins from the SETAF PAO, LTC McNerney and Mrs. Millie Waters from the USAREUR PAO, LTC James W. Dirkse, Mr. Harald Späth, and, of course, all "Sky Soldiers" for their continuing outstanding support during Exercise "Agile Lion 2002", without which this report would not have been possible.



The SETAF Patch

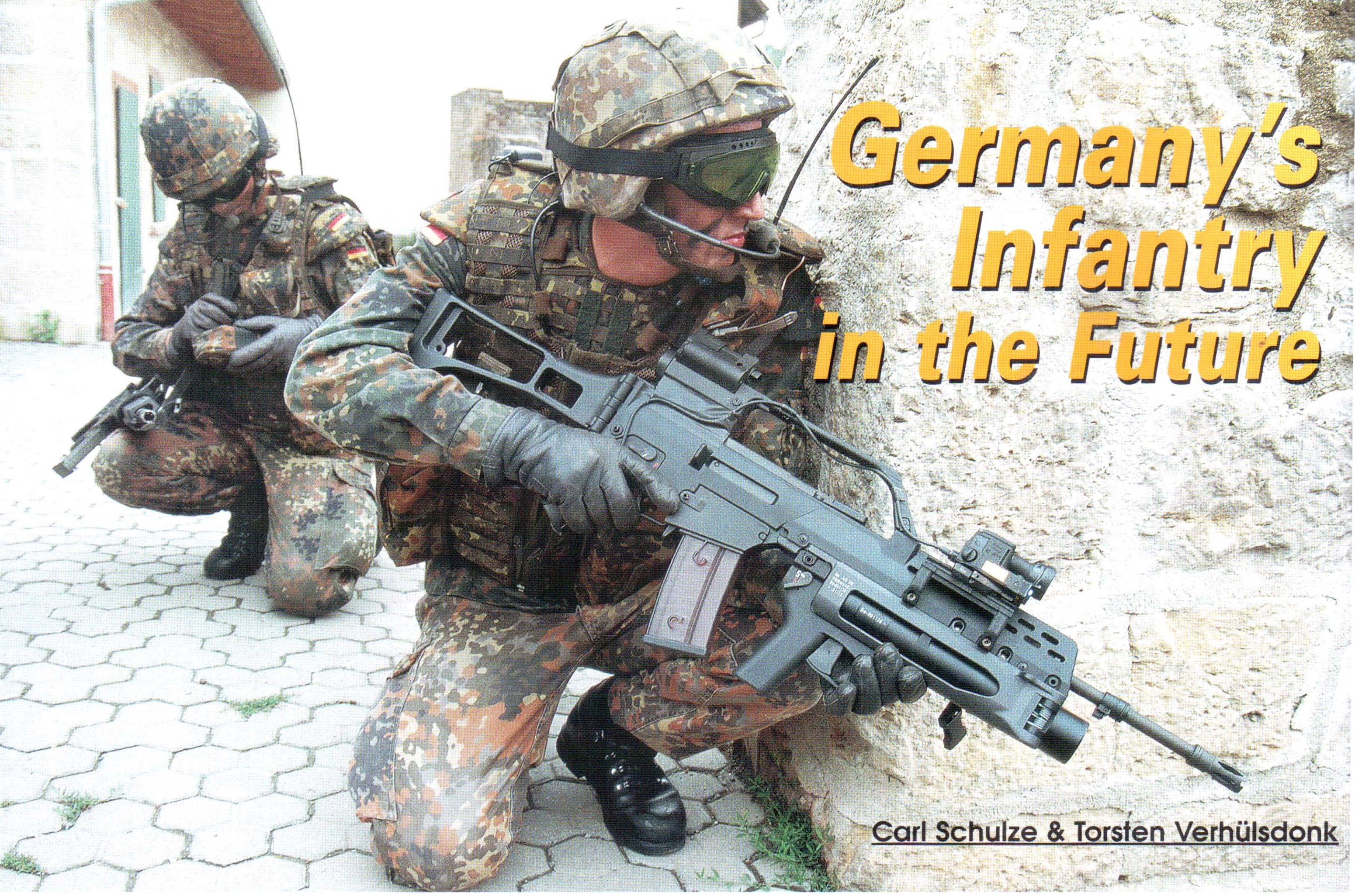
The background of the insignia is a shield bearing the red, white and blue of the national colors. Superimposed in gold on the red, white and blue escutcheons is the winged Lion of St. Mark above a gold bar. The history of the Lion of St. Mark, which appears on the various insignia of all NATO units in Italy, spans more than 2,000 years of recorded time and touches upon some of the most significant developments in western civilization. In ancient times, it was believed that lions were born dead and that they came alive after three days when their sires breathed life into them.

The lion became a symbol of St. Mark because the resurrection of Jesus Christ is a dominant theme in his gospel. St. Mark also preached the royal descent of Jesus from the Hebrew kings, whose emblem was the Lion of Judah. This symbol, with wings to denote the evangelist's divine mission, has represented St. Mark in painting and sculpture since the earliest days of Christianity. The Lion of St. Mark holds an open book under his raised paw on which the Latin word "Pax" is written, which is short for "Pax Tibi Marco Evangelista Meus" ("Peace to thee Mark, My Evangelist"). Often the lion is depicted with a pen and inkpot. These items denote the fact that St. Mark was St. Peter's secretary and is said to have written his gospel according to the accounts given by Peter.



The 173d Airborne Brigade Patch

The shoulder patch worn by the men of the 173d Airborne Brigade came into being with the unit's activation in June 1963. The red bayonet signifies a strike force borne by a white wing, which denotes that the strike force can be flown by transport aircraft and dropped by parachute into any assigned objective. The tab reading "Airborne" above the shoulder patch indicates that the men are paratroopers and all of the Brigade's equipment is air transportable. The patch's colors – red, white and blue – are the national colors of the United States of America.



Germany's Infantry in the Future

Carl Schulze & Torsten Verhülsdonk

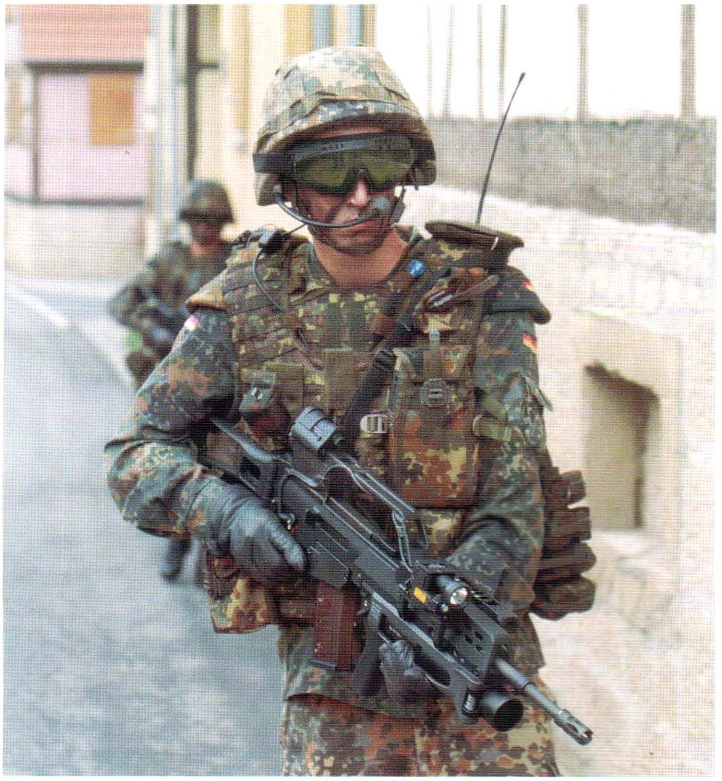
This photograph shows a modern German infantryman armed with some of the newest equipment, e.g., the AG36 grenade launcher mounted under the foregrip of his G36 assault rifle and body armor at the German protection level of Class 4.

In the past, the German *Bundeswehr* (army) was focused on the defense of German and NATO territory. Since 1993 and the first deployment of German troops as part of a UN mission, this has changed drastically. Today, German soldiers are involved in peace support and peace enforcement missions in Afghanistan, Bosnia and Kosovo. In addition, Germany is a member of the world-wide alliance against terrorism. Based on these changes, the job of modern infantrymen is more complex. In the defense of German and NATO territory, the infantry bears the main burden of fighting enemy infantry, fighting in built-up areas, fighting in woods and forests, and fighting in mountain regions. In addition, the infantry is responsible for defending objects and controlling areas. In peace support and peace enforcement missions, the infantry is tasked with monitoring and controlling, establishing buffer zones, conducting patrols and escort missions, setting up road blocks, blocking lines of communications and bridges, and controlling key terrain.

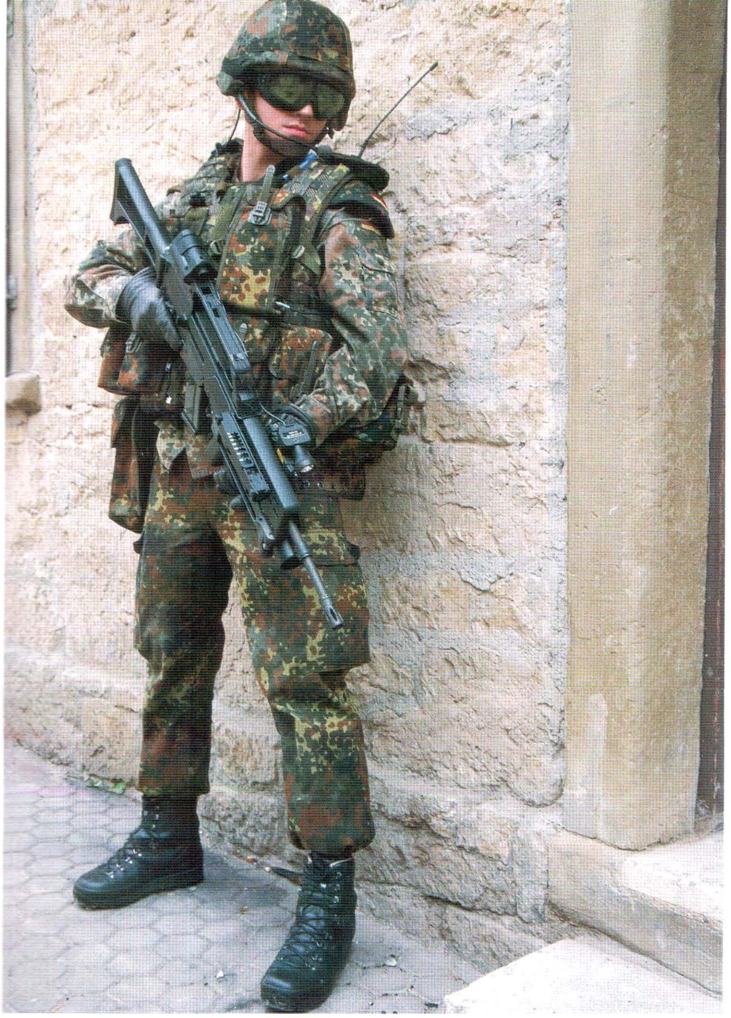
Because the personal equipment and weapons currently used in the German infantry do not meet all the requirements for the many tasks of the infantry, the German School of Infantry (*Infanterieschule*) began to develop new mission-oriented, infantry-specific equipment under the program named *Infanterist der Zukunft* (Infantryman of the Future).

Soldier Modernization Program

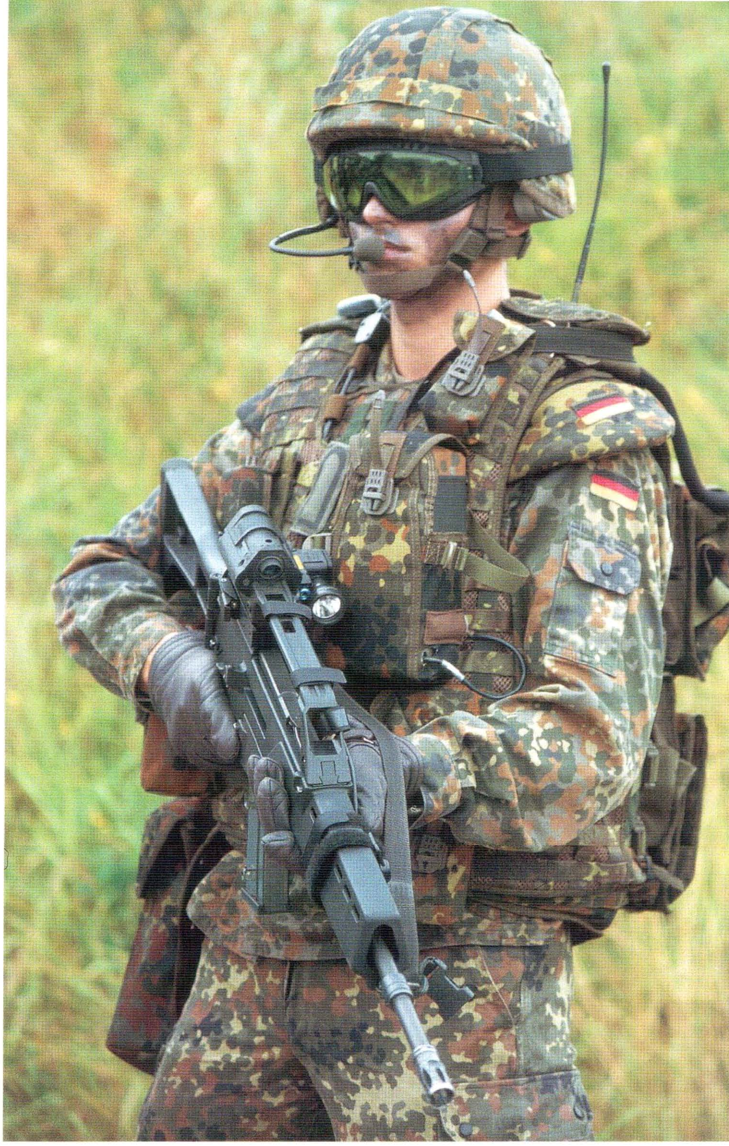
In 1987, NATO began the "Soldier Modernization Program", the aim of which was the evolution of the capabilities of the infantry and the development of new infantry equipment. In the following years several NATO member states launched their own projects dealing with infantry weapons and equipment for modern infantrymen. In the USA, the development is divided into three steps. The first, which is called "Land Warrior", will be introduced from 2004 onwards. The second, "Objective Force Warrior", is to enter service in 2010. The final step will be "Future Warrior", which is scheduled for 2025.



Future German infantrymen will be armed with the G36 assault rifle in caliber 5.56mm. Mounted under the foregrip of the weapon is the AG36 40mm grenade launcher made by Heckler & Koch. The soldier's new modular combat vest is shown to advantage here. The vest allows the soldier to individually fasten pouches for his kit.



The future German infantryman will be armed with the 5.56mm G36 assault rifle and 40mm grenade launcher mounted under the rifle's foregrip. The modular body armor is shown here with lower protection attached. The body armor has a protection level up to Class 4 and knife thrust protection. The head and face are protected by the combat helmet made from aramid and a pair of splinter protection goggles. The German infantry that is modernized as a result of the Infanterist der Zukunft *program will make a move from light forces to medium forces and thereby enhance its capabilities and range of missions.*



With the introduction of the first modules of the new infantry equipment in 2004, the German soldiers' kit will be a mix of items already in use and modules of the new equipment. Examples of items that have already been issued are the G36 assault rifle and the ballistic helmet made of aramid.

In Great Britain, "FIST" is under development. It is planned that it will enter service by 2008, followed by "Robo Soldier" in 2015. France plans to introduce new equipment and weapons to its infantry by 2006 under a program named "FELIN". Since 1991, Germany has been taking part in the Soldier Modernization Program. While the French, British and US systems focus mainly on the individual infantryman, the German concept focuses on the infantry section, which consists of ten soldiers and their transport vehicle. In 1993, the *Bundeswehr* conducted first concept studies also involving price calculation and development risks. Since 1997, the German School of Infantry in Hammelburg, Bavaria, has run an experimental program together with several defense companies grouped as *Projekthaus System Soldat*. *Projekthaus System Soldat* is a joint venture of the following companies: Dornier EADS GmbH, Heckler & Koch, Thales Communications, Dräger, Zeiss Optronik, Schubert Helme, Mehler, and ESG.

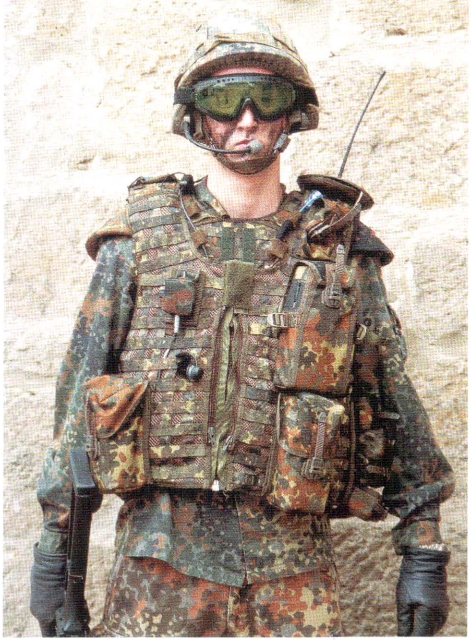
By 2002, the majority of the designed equipment had nearly reached production standard. In the summer of 2002, the *Bundeswehr* conducted a large user trial in which most components of the new equipment were tested in Kosovo with the German KFOR contingent. At the time of this writing in December 2002, the first elements of the new equipment had already entered service. For example, the German ISAF troops received a new 40mm automatic grenade launcher. Another piece of equipment belonging to the *Infanterist der Zukunft* project and already in use is the Personal Data Assistant (PDA), which the German Army Air Corps pilots use in Afghanistan. The high speed in development and acquisition was made possible by trying out new ways of procuring defense equipment. Most components are based on equipment available on the civilian market – a principle called COTS (Custom Off the Shelf). For instance, the test version of the PDA hardware comes from Compaq and uses civilian software.

Five Key Areas

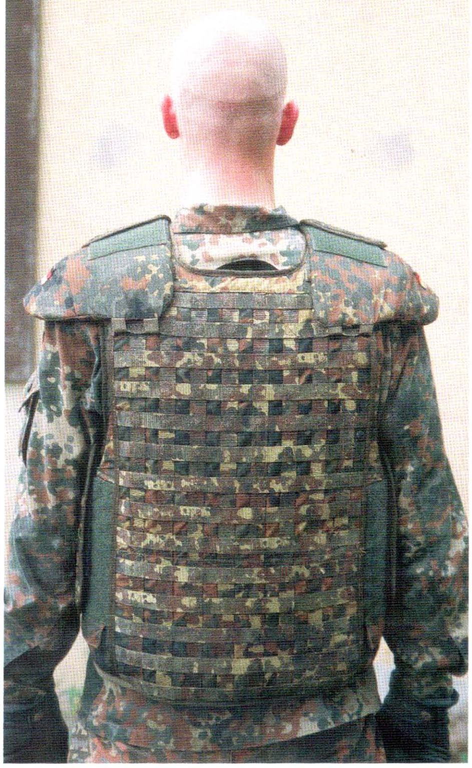
The main aim of the *Infanterist der Zukunft* program was to increase the capabilities of the infantrymen by using new technology in their equipment while at the same time minimizing the weight and size of their kit. The development team concentrated its work around the following five key factors:

- Survivability
- Command and Control
- Mobility
- Assertiveness
- Perseverance

These five key areas are all linked together and interact with each other. This makes it very hard to trace individual parts of the *Infanterist der Zukunft* equipment to only one of the five areas. However, each key area has certain sub-areas assigned to it. The assertiveness area consists of measures and developments to improve weapons, ammunition, sighting equipment, day and night fighting capability, and reconnaissance. The



The German infantryman under the Infanterie der Zukunft program. Visible on the soldier's left shoulder is the section radio antenna, while the GPS antenna can be seen on the right shoulder. In the final version, which will be issued by 2004, both antennas will be moved to the soldier's back on top of the battery pack. Clearly visible is the PDA pocket, worn here on the left side, and the control element for the section radio on the right chest.



This rear view of the new body armor illustrates well the system of crossed straps to which the pockets can be fastened. The system allows individual positioning of the pockets horizontally and vertically.

Fastening straps at the sides of the modular combat vest are used to adjust its fit. This provides a quick and easy adjustment of the vest to compensate for the volume of the clothing worn underneath whether it be body armor with or without ceramic plates, cold weather protection clothing, NBC equipment, or whatever.

survivability area covers camouflage, the protection of the soldier against the impact of enemy weapons, and the early detection of an enemy threat. In the area of command and control, the focus was on information gathering, information handling and information processing. The mobility area focuses on clothing and equipment, as well as the effect of the environment on the soldier and the distances covered during operations. The perseverance area targets technical functionality, supply, fighting abilities, and handling emergency situations.

Existing Equipment and New Modules

When the *Infanterist der Zukunft* program-based equipment is introduced in 2004, the basic kit of an infantryman will comprise both what is already in service and newly developed modules. As early as the early 1990s, the personal equipment of the German soldier had been improved drastically by the introduction of new gear. Among the improvements are a new camouflage uniform made of a lightweight material belonging to the so-called *Bekleidungssystem* 90, Gore Tex waterproofs, a new combat helmet made of aramid, new combat boots, a new rucksack system, and new webbing consisting of a new belt, yoke and several types of pockets for different items.

In addition, new infantry weapons replaced well-known older ones. For example, the 5.56mmx45 G36 assault rifle replaced the 7.62mmx51 G3 as the standard weapon of the *Bundeswehr*. The 9mm P1 made by Walther was also dropped and replaced by the 9mm P8 manufactured by Heckler & Koch. Besides the new G36, a new night vision scope, the NSV 80, was also introduced. The snipers of the German army received the G22 sniper rifle, a version of the Accuracy International in caliber .300 Winchester Magnum.

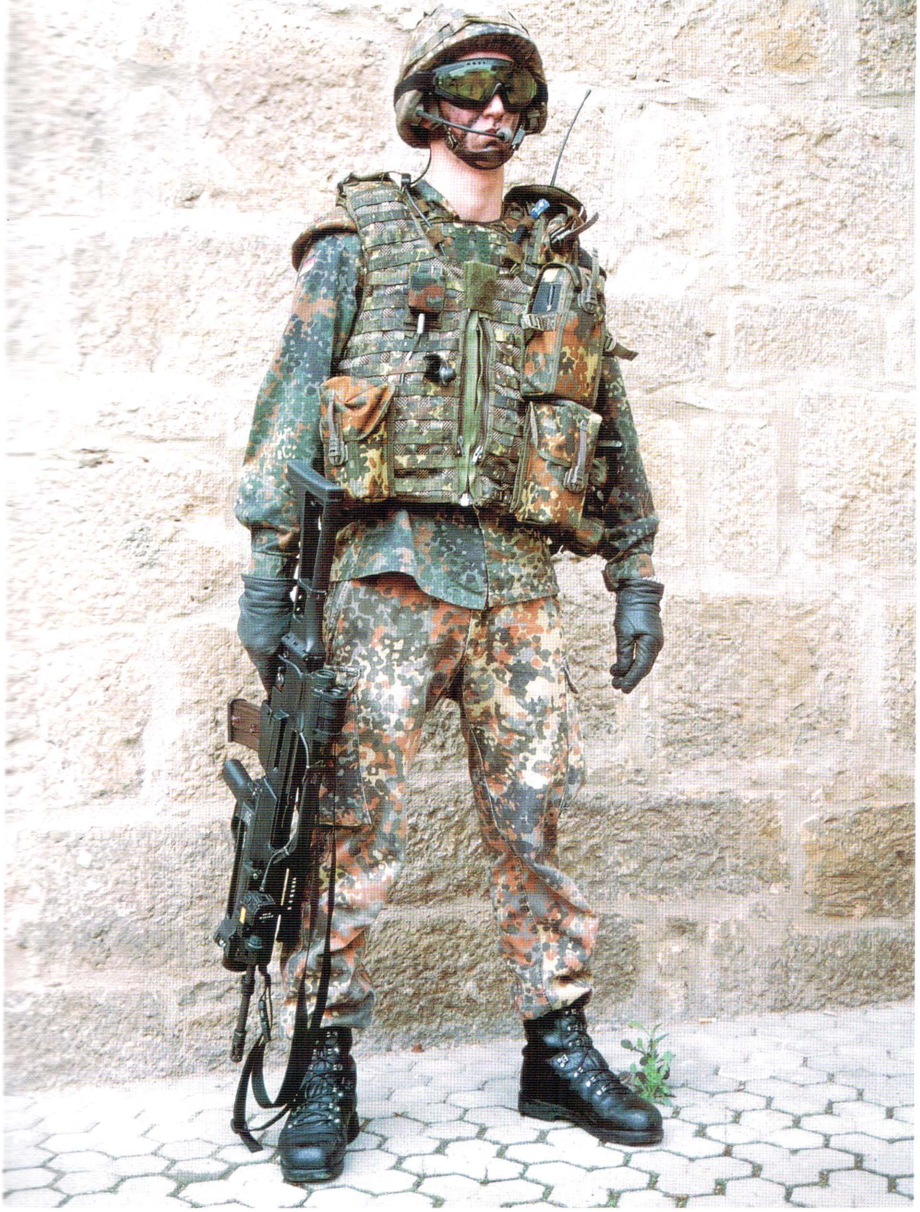
Other new kit includes the new radio family consisting of the SEM 70, SEM 80, SEM 90, and the Leica Vector IV spotter scope, which includes a laser range finder and a digital compass. The German Special Forces and airborne units recently received the new NVG Lucie, which will also see service with a larger range of units in the future. Very soon the new NBC Respirator 2000 will replace the NBC Respirator Model M65, which has been used since 1965. Currently, the introduction of the following new modules of the *Infanterie der Zukunft* program is planned for 2004:

- Protection system, including a new coverall-type flame-resistant combat uniform with integrated NBC protection, a new helmet, new body armor, splinter protection for hands and arms, and ballistic protection goggles.
- Modular combat vest.
- Command and control system including section radio system, personal data assistant (PDA) with GPS, digital map, IFF transponder, and headset.
- Thermal imaging system for observation and as a weapon sight for infantry weapons.
- Personal defense weapon.
- Improved 40mm grenade launcher.
- Universal function sensor block.
- Improved version of the Panzerfaust 3 anti-tank weapon.
- New type of power-supply system for the electric kit of the section.

Infantry Section of the Future

The introduction of the first lot of *Infanterist der Zukunft* equipment is planned for 2004. The plan is to deliver 32 section systems to the German forces then operating abroad, e.g., those currently in Afghanistan, Bosnia and Kosovo. Another 160 systems will be delivered to the German airborne infantry, mountain infantry and light infantry units. Beginning in 2008, the German armored infantry units and the air force security units (*Luftwaffensicherungstruppe*) will receive 680 section systems. The system price for a 10-soldier section will be between 250,000 and 270,000 Euro. To implement the *Infanterist der Zukunft* program as planned, a funding of 14.2 million Euro is required.

Just as it is today, the future German infantry section will be 10 soldiers strong. It will be equipped with a ballistic-protected transport vehicle such as the 8x8 MRCV, the 4x4 ESK or the tracked BV 206S. Except for the section commander, each soldier will be armed with the 5.56mm G36 assault rifle. Three of the weapons will be fitted with the AG36 40mm grenade launcher mounted under the foregrip. A laser light module will be added to the currently used sight of the G36 that consists of a reflex sight and an optical sight with x3 magnification. The 400-gram (14-ounce) device consists of a halogen flashlight and a laser pointer that



The German infantryman of the future poses to show off the newest equipment. Pockets on the modular combat vest can be mounted individually depending on the wearer's needs and the mission. The pocket straps are woven into the cross strap system based on the vest body. This sounds fragile and complicated, but in reality is very easily done and extremely durable.

When the first modules of the Infanterist der Zukunft *equipment are issued in 2004, the infantryman will still be equipped with the ballistic helmet made of an aramid/phenol resin compound. Mounted in the helmet will be a headset for the section radio that is linked with the radio on the soldier's back by means of a cable. However, the* Bundeswehr *is already designing a new modular helmet that will consist of a basic helmet and ballistic protection elements that allow the helmet to be modified for the mission.*

Also part of the new ballistic protection equipment of the Infanterist der Zukunft *program is a set of splinter protection goggles. The goggles protect the highly sensitive eye area of the face against the effect of small shrapnel such as that created by hand grenades. The splinter protection goggles can stop the NATO standard 1.1-gram splinter travelling at 210m/s (689f/s).*

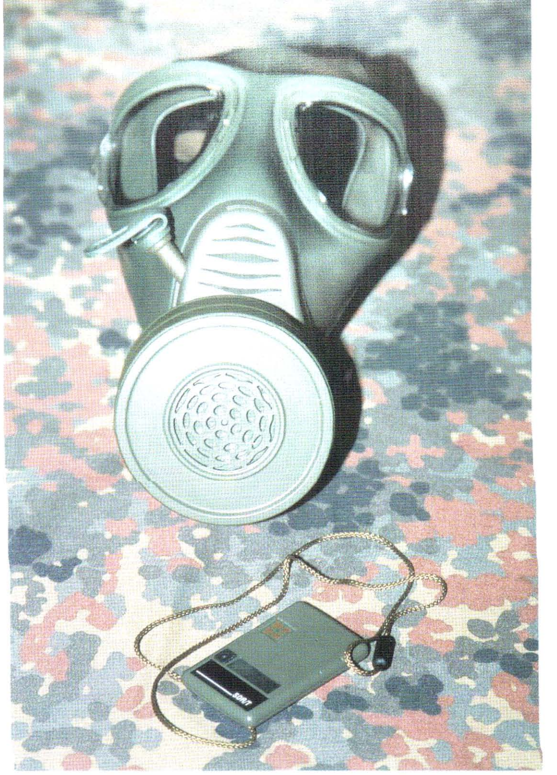
can be operated in the visible or non-visible range. The NSA 80 night vision attachment, which is placed in front of the optical sight, will be available for eight of the G36s in the section. The section can also field two thermal imaging sights.

The section leader or soldiers serving heavy weapons will carry the 4.6mmx30 MP7 submachine gun made by Heckler & Koch as personal defense weapon. The section will have two units of the Panzerfaust 3 anti-tank weapons to fight tanks. Each soldier's protective equipment will consist of body armor at the German Class 4 protection level, a new combat helmet with integrated headset, and shrapnel protection goggles. Each soldier will carry his personal kit in a modular combat vest to which pockets for different items can be fitted according to the user's needs.

The section command and control system, which will be integrated into the vest, consists of the section radio, GPS receiver, PDA, UHF radio antenna, GPS antenna, and power source. In the past, the soldier's personal equipment had an average weight of 47kg (104lb). In the future, the weight of the basic kit will be approximately 20kg (44lb), to which up to 10kg (22lb) of mission-orientated kit can be added. With the introduction of the new weapons and vehicles, the German infantry will be upgraded from light forces to medium forces, thus increasing the spectrum of tasks they can cover.

New Infantry Weapons

The current small arms weapon pool of the *Bundeswehr* comprises the P1 and P8 9mm pistols, the G3 7.62mmx51 caliber and G36 5.56mmx45 caliber assault rifles, the MP2 9mm



Soon the soldiers of the Bundeswehr *will be equipped with the new NBC respirator, the* ABC Schutzmaske 2000. *Available in three sizes, the respirator allows the wearer to drink via a pipe that is connected to the water bottle. For easier handling of weapons, the canister can be moved from the center position to either the left or right. Compared with the soldier's eye, the field of vision of the respirator is 90%. The new radiation dosimeter, which in the future will belong to the personal kit of each soldier, can be seen in front of the respirator.*

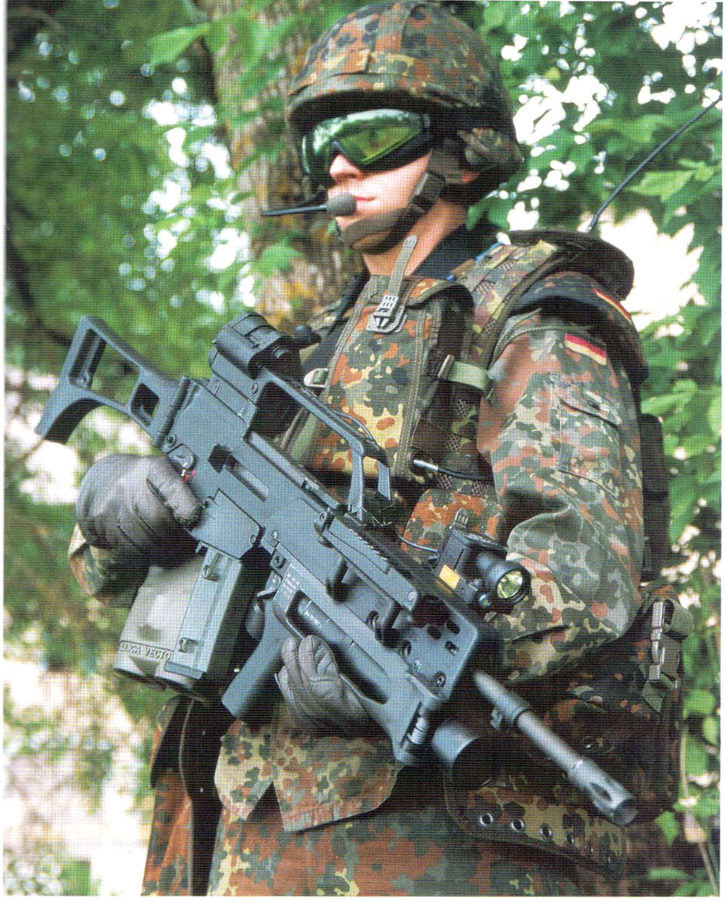
The goggles can be fitted easily by clipping on different filters. The yellow filter for UV protection, the green filter for laser protection and the clear glass for splinter protection. Here the goggles are used with the green laser-protection filter.

The 400-gram (14-ounce) section level radio is located in the lower area of the rear portion of the modular combat vest. The 1.2-kg (2.6-lb) power supply is placed above it.

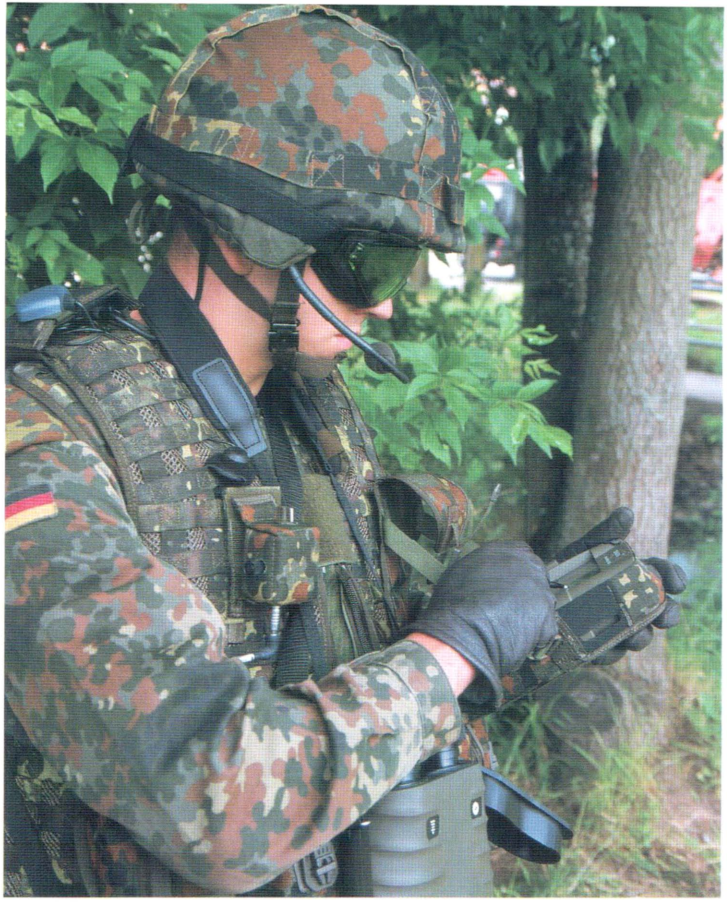
submachine gun, the MG3 7.62mmx51 machine gun, and the HK69 *Granatpistole* 40mm grenade launcher. The assertiveness area features improvements of available weapons, if possible, and the introduction of new weapons. In the future, the PDW 4.6mmx30 caliber personal defense weapon will replace the pistols. The replacement of the MP2 submachine gun and the G3 assault rifle by the G36 is already underway. Beginning in 2004, the HK69 *Granatpistole* 40mm grenade launcher will be replaced by the AG36 grenade launcher, which is mounted under the foregrip of the G36. The MG3 machine gun will remain in use in the infantry, although it will be supplemented by the 40mm automatic grenade launcher made by Heckler & Koch. By 2010, both weapons are to be replaced by a new multi-purpose weapon. The capabilities of the G36 are further improved by newly developed sighting equipment. A .50-caliber sniper rifle will eventually be introduced into the infantry's inventory.

***Infanterist der Zukunft* - KFOR Deployment**

Between May and October 2002, the *Bundeswehr* tested the *Infanterist der Zukunft* system for six months during operations with its KFOR contingent in Kosovo. A 25-soldier platoon of *Jägerlehrbataillon* 353 was attached to the Prizren-based Task Force Prizren of the German-led Multinational Brigade South. During the trial period, the new modules were mainly tested in standard peace enforcement and peace support scenarios. The *Jäger* units (Germanys elite light infantrymen) conducted routine operations such as foot patrols in Prizren, running OPs, patrolling the Albanian and Macedonian border, and setting up and operating VCPs. In addition, more challenging missions such as the observation of criminals, the support of the German military police during house searches and snatch operations, searches for weapon crates in the mountains, and the gathering of intelligence, were conducted with the new equipment.



In the future, each infantryman in the section will be equipped with the section radio, which will enable him to receive orders and transmit information. If the sending direction is not blocked, the radio has a range of 14km (8.6 miles). In built-up areas, communication is still possible at a range of 700m (765 yards). The radio can be operated by means of the helmet-mounted headset seen here or with a handset or a regular headset.

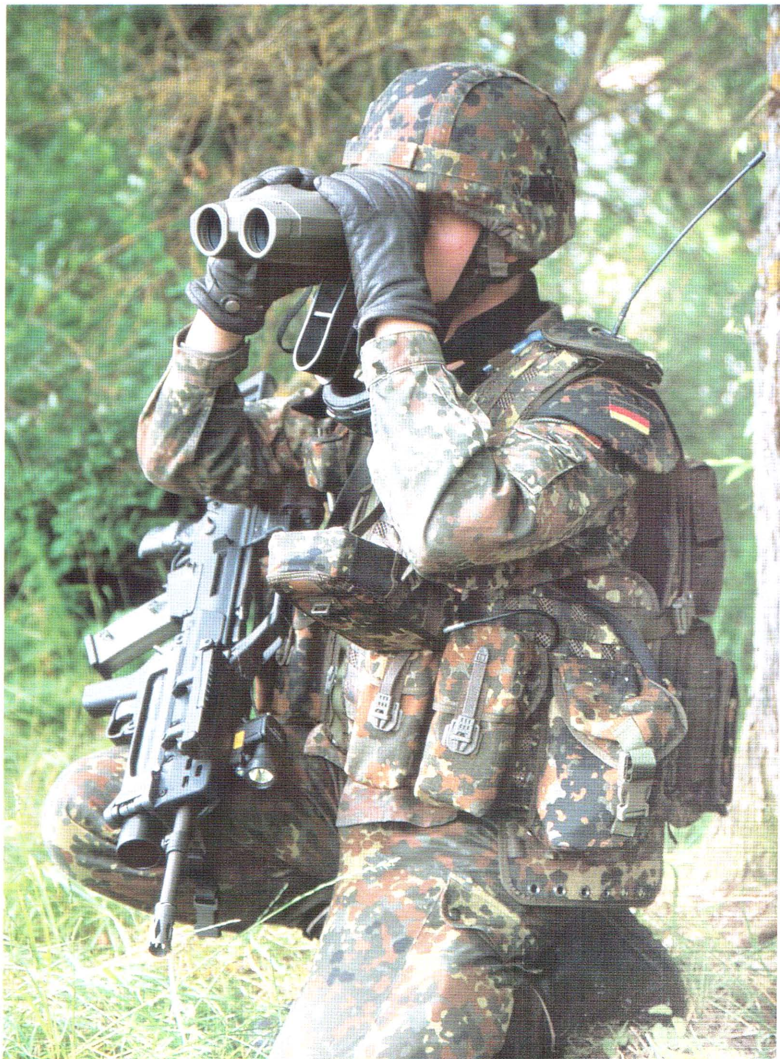


A bluetooth interface links the PDA with the Leica Vector IV binoculars with integrated laser range finder and digital compass. This allows for using the data gathered with the Leica Vector IV in combination with the information stored in the PDA.

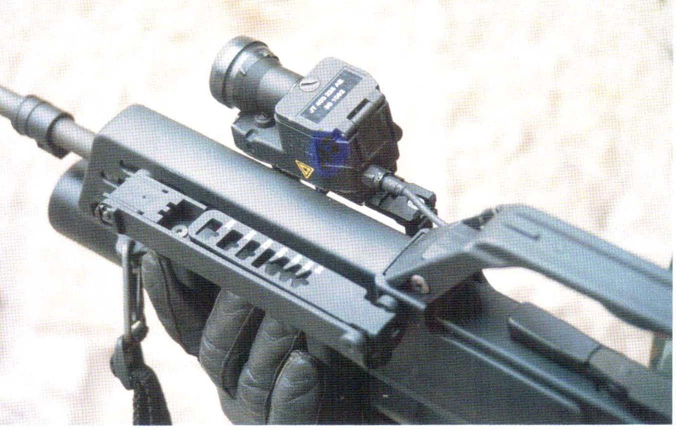
Even though the results of the user trials were kept secret, soldiers will tell you that the new equipment greatly enhances the capabilities of the German infantryman. The soldiers involved in the user trial praised the new command and control abilities, as well as the 100% night fighting capability of the section. The new body armor was also declared to be a huge step forward since it increases comfort in comparison to the old model without sacrificing protection. Currently, the German School of Infantry together with the *Projekthaus System Soldat* is researching the trial results to further improve the *Infantrist der Zukunft*. However, some of the problems found with the new kit were already solved during the six-month tour since technicians of the companies involved in the development closely monitored the trials.

Ongoing Evolution

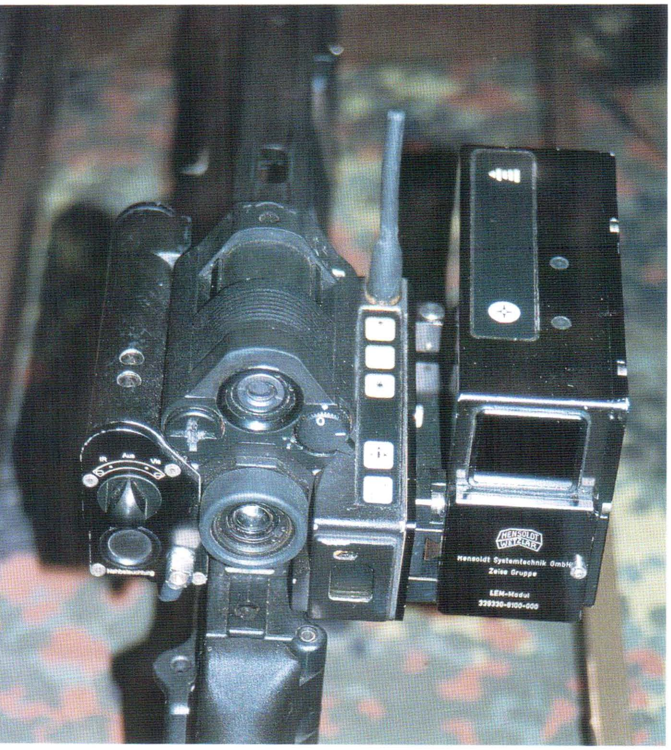
The evolution of the infantryman's equipment will not stop with the introduction of the new *Infanterist der Zukunft* kit in 2004. The newly introduced kit will subsequently be upgraded in order to keep the infantryman's equipment at the latest technical level at all times, constantly improving his capability. With this strategy, the *Bundeswehr* will keep pace with the current technological development on the civilian market such as in the area of communication electronics and data processing. Future plans include integrating the infantry soldier into FAUST (*Führung Ausstattung Taktisch* – tactical leading equipment). FAUST will make it possible to exchange information and orders via data transmission from infantry section level up to high command levels in brigade, division or higher.



The Leica Vector IV binoculars with integrated range finder, digital compass and inclinometer are already in use with the snipers of the Bundeswehr. *In future, they will belong to the equipment of the section leader of an infantry section.*



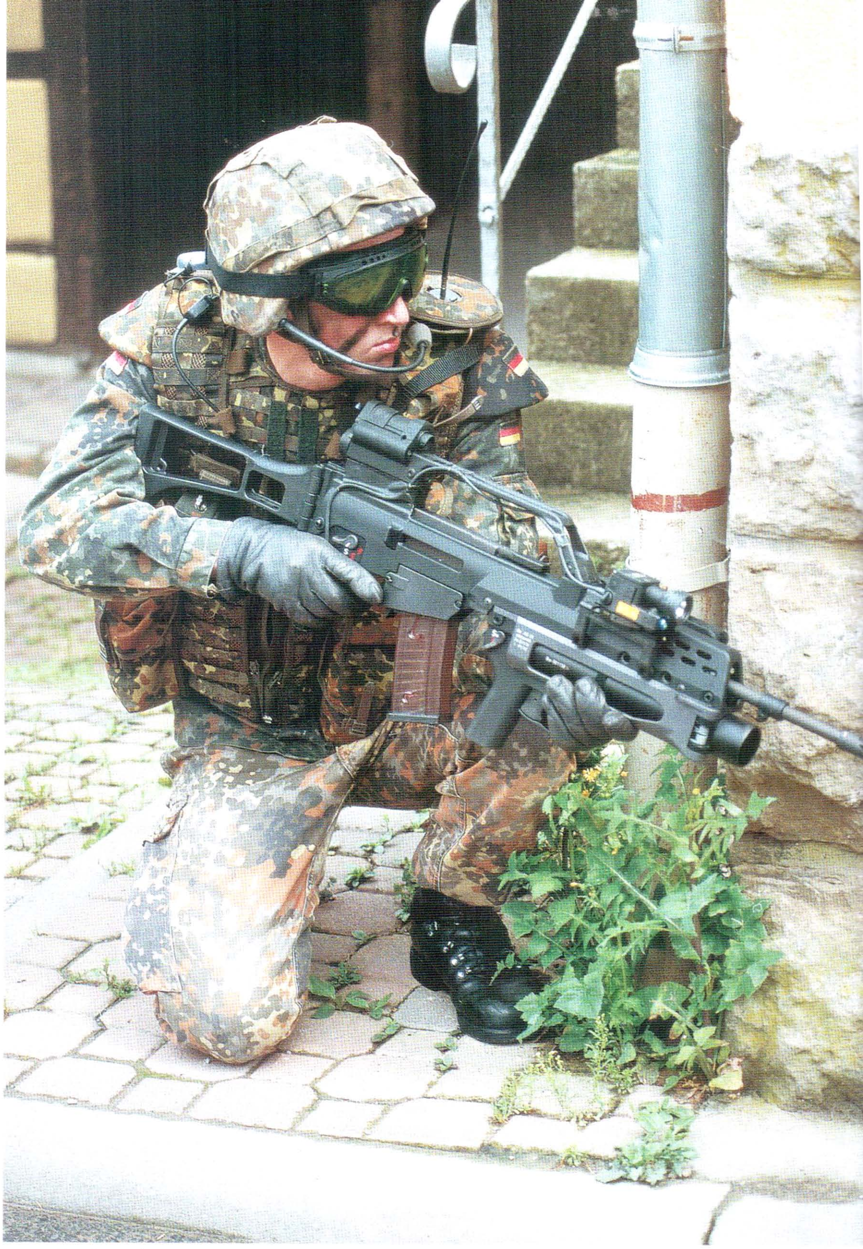
The ladder sight, which can be mounted on the left or right side of the G36 foregrip, has aiming increments of 50m, 100m, 150m, 200m, 250m, 300m and 350m.



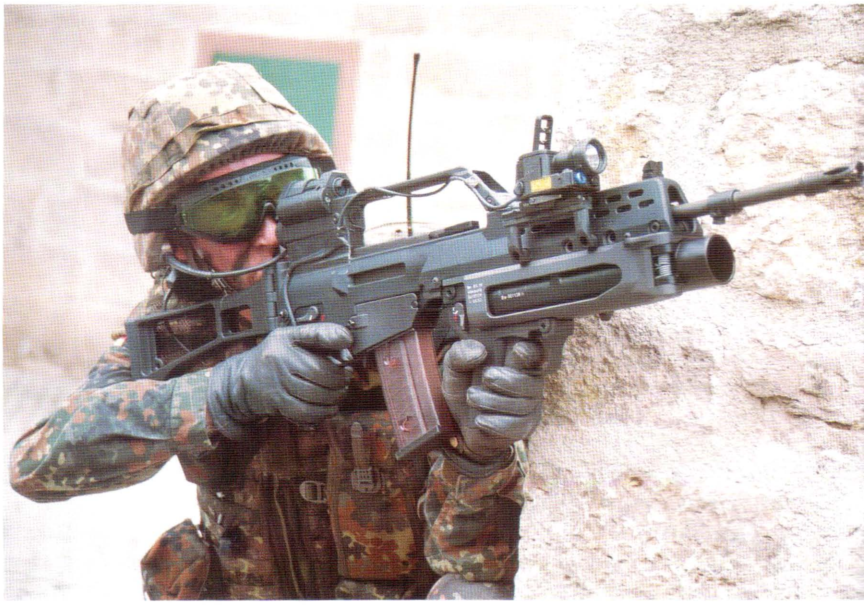
Due to the lack of guidelines for a friend/foe identification system within NATO, the Modular Multifunction Optronic (MMO) for infantry weapons (such as the G36 shown here) has not yet reached production standard. The MMO consists of a Multifunction Laser Module (MLM), a Measurement Module (MEM) and an alternative Infrared Module, which is not fitted in the photo. The MLM, which consists of the parts to the left and right of the original G36 sight, incorporates a laser pointer that can be operated in a visual or infrared mode, an infrared illumination light and an IFF module. The MEM, which is the box on the far right of the G36 sight, consists of a laser range finder and a digital compass with declination sensor.

Germany claims that the aim of the *Infanterist der Zukunft* program is to avoid developing a system that will remain in service for 20 years without changes, as was done in the past, and to always equip the infantryman with the latest technology to increase his impact on the battlefield.

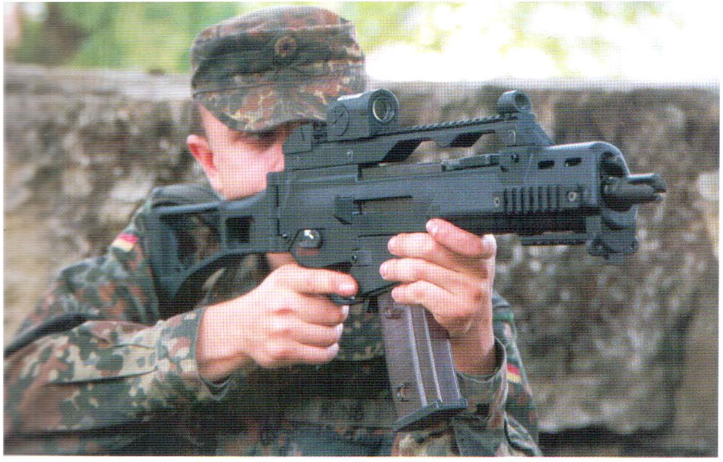
The author would like to thank the following persons for their help during the research for this article: The members of *Gruppe Weiterentwicklung Infanterie* of *Infanterieschule* in Hammelburg and the soldiers of the 5th Company *Jägerlehrbataillon* 353. Special thanks go to Oberstleutnant Althoff, Hauptmann Thiel and Stabsfeldwebel Nikolaus.



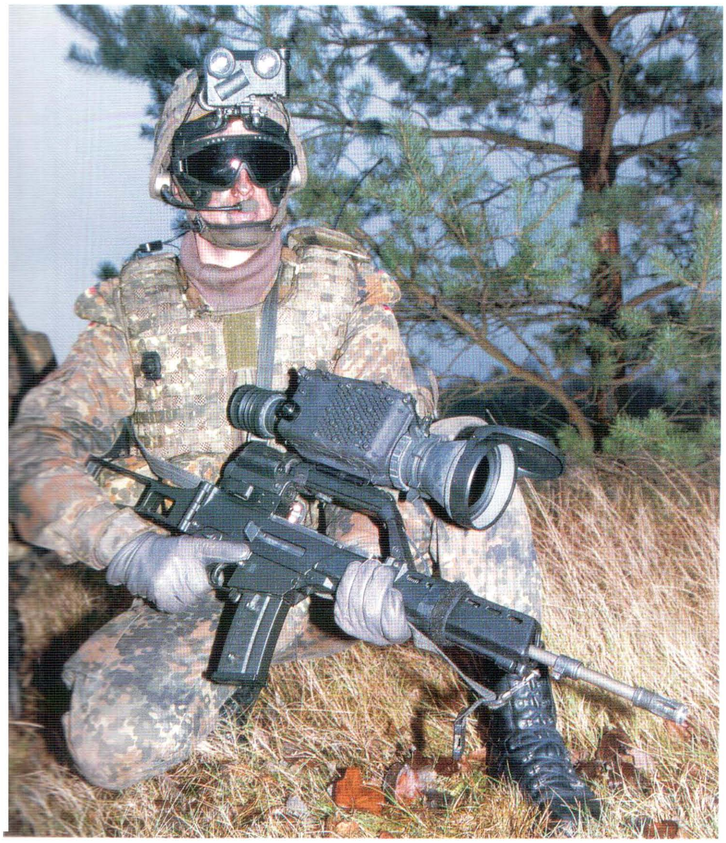
Under the Infanterist der Zukunft *modular equipment concept, the assertiveness, survivability, command and control ability, perseverance, and mobility of troops are enhanced drastically.*



The AG36 grenade launcher will eventually replace the HK69 40mm grenade pistol in the inventory of the German infantry section.

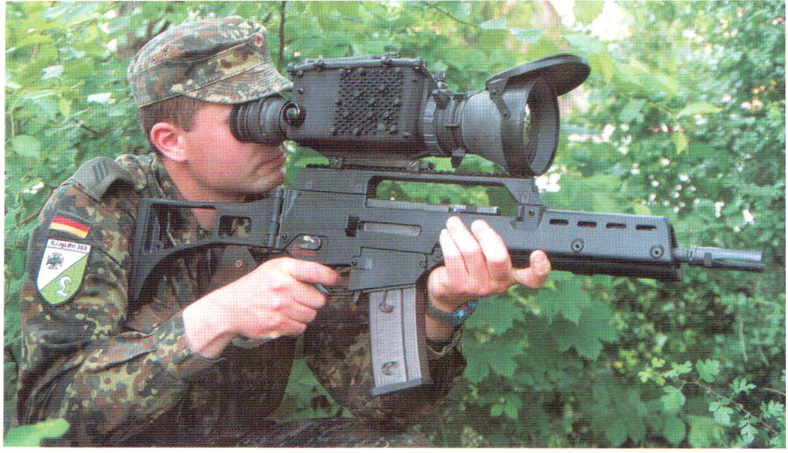


Also under trial with the Infanterist der Zukunft program is this sole 720mm- (28-inch) long version of the G36, the G36C. When the foregrip is folded, the weapon length is reduced to 500mm (20 inches). The barrel of the G36C has a length of 228mm (9 inches). In comparison, the G36 is 758mm (30 inches) long with folded foregrip, and the G36k is 615mm (24 inches) long. The weight of the G36C is 2.8kg (6lb). Considering its size, the weapon can be regarded as a submachine gun with the capabilities of an assault rifle.

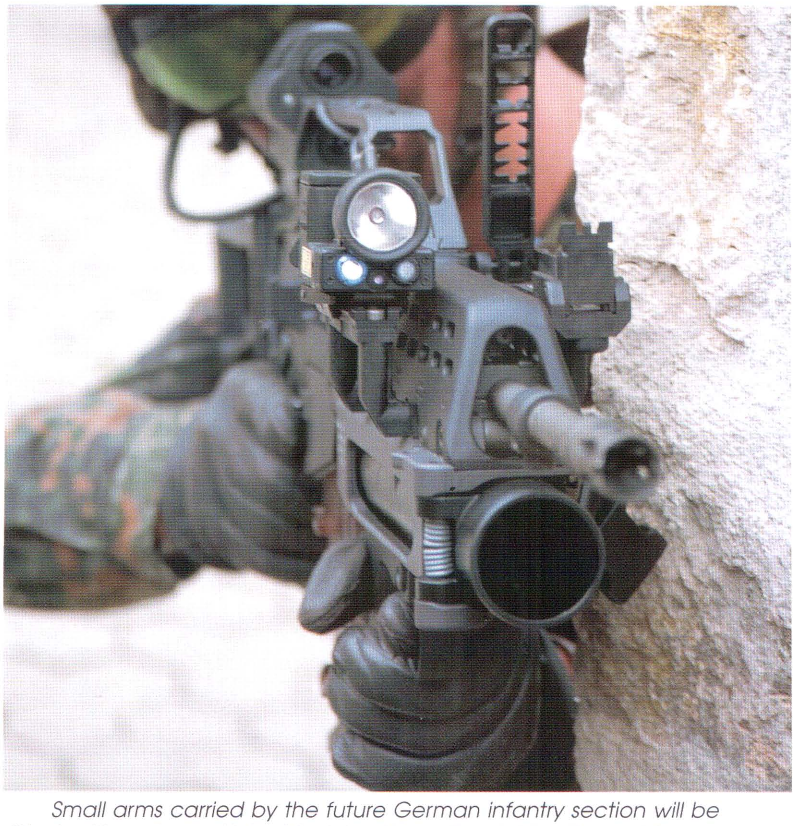


With the Infanterist der Zukunft program, thermal-imaging technology will be available in the German infantry on section level. In the future, each section will have three TWS AN/PAS-13A(V) thermal imaging sights. The 2.5-kg (5.5-lb) system is 45.7cm (18in) long, 14cm (5.5in) wide, and 15.5cm (6in) high. The TWS is mounted on the G36 by a Weaver rail that is situated on the carrying handle of the weapon. At 23°C (73°F) and with a stand-by time of 71%, the system can be operated for 12 hours with one set of batteries. The TWS AN/PAS-13A(V) is manufactured by the German company Zeiss Optronik GmbH in co-operation with Raytheon Systems Company in the USA.

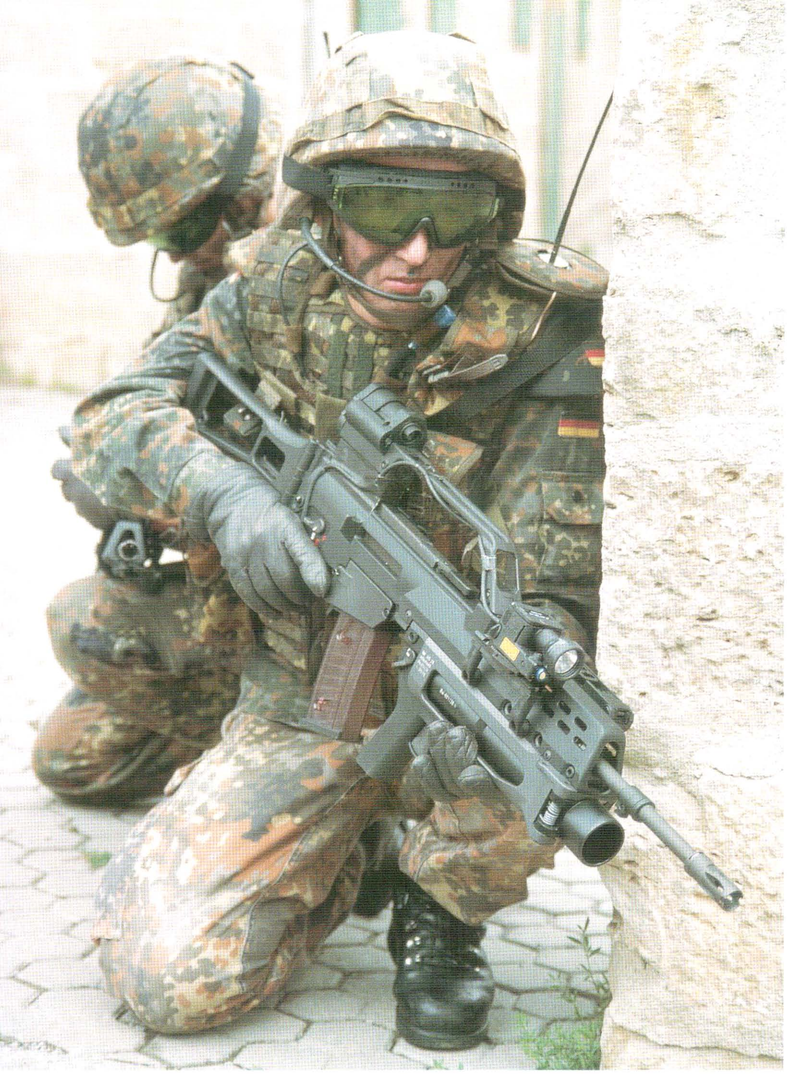
The Laser Light Module (LLM) will be lifesaving device for the German infantryman of the future. In duel situations at a short distance or when an enemy suddenly appears, the technology allows the soldier to engage the enemy with a high degree of first shot-first hit efficiency by firing from the hip without having to move into a proper aiming position.



In addition to being a sight for small arms using the small field of vision of 9°x5.5°, the TWS AN/PAS-13A(V) can also be used as an observation device with the large field of vision of 3°x1.8°. When the thermal sight is mounted on a tripod, it is possible to identify an object up to a distance of 1350m (1476 yards).



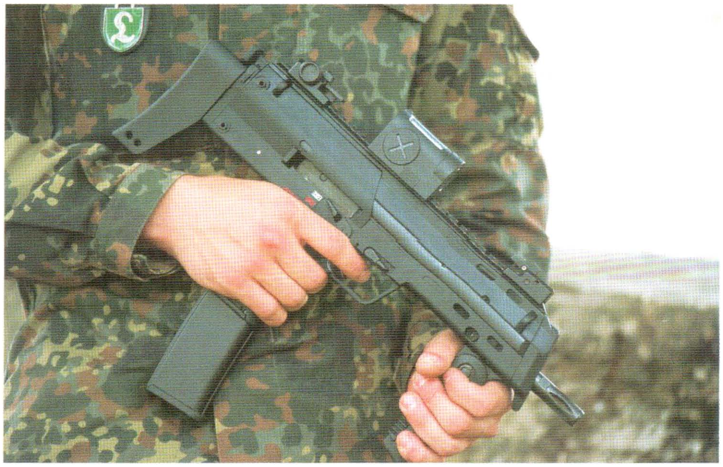
Small arms carried by the future German infantry section will be fitted with a Laser Light Module (LLM). The LLM will consist of a halogen flashlight and a laser pointer that can be operated in visual and infra red mode. When using the infra red mode, the infantryman can spot the aiming point by using his LUCIE night vision goggles.



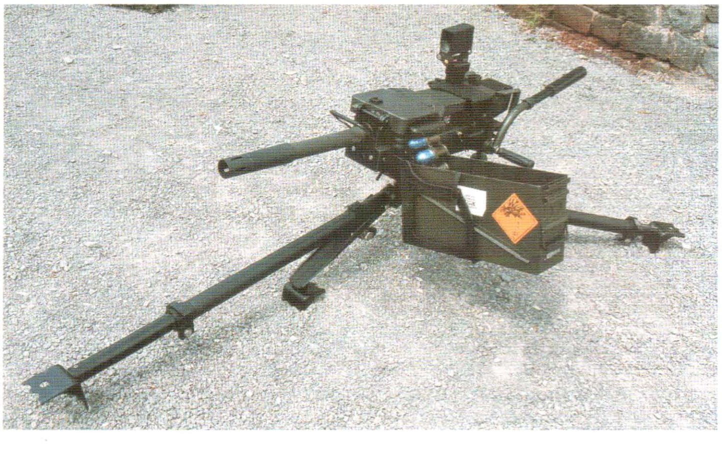
The LLM, which has a weight of 400g, is operated by a touch switch that is linked with the LLM via a cable. The soldier can decide where on his weapon he wants to place the switch.

The MP7 Personal Defense Weapon has a theoretical rate of fire of 950 rounds per minute and is able to penetrate the NATO CRISAT target up to a range of 200 meters (656 feet) when a full metal jacket round is used. The CRISAT target consists of a 1.6mm-thick piece of titan and 20 layers of Kevlar.

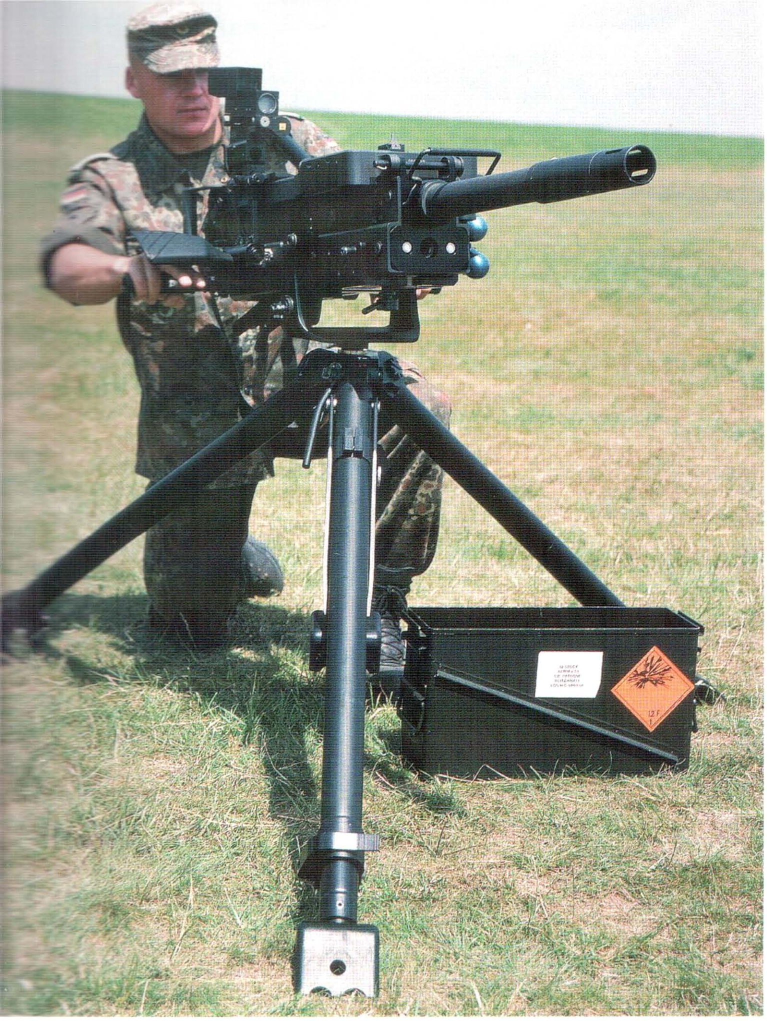
The Laser Light Module can be mounted onto the Weaver rail on the MP7 PDW. Section commanders and the crews of heavy infantry weapons will be equipped with the MP7 PDW Personal Defense Weapon.



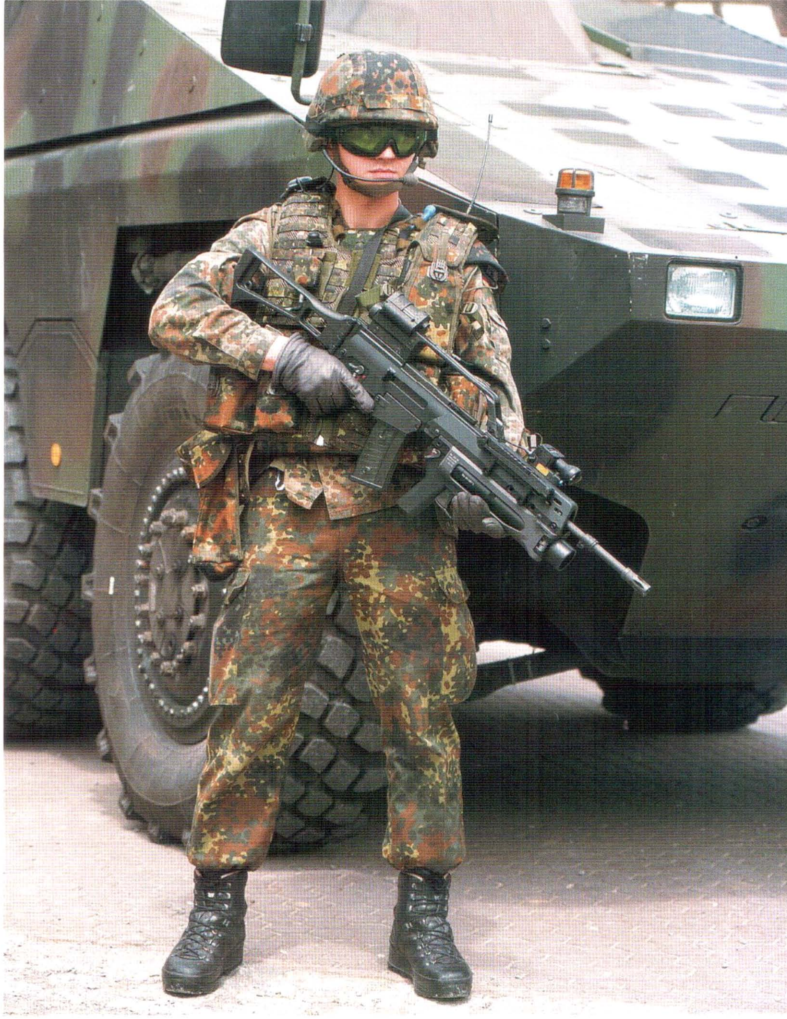
The MP7 PDW, the new personal defense weapon manufactured by Heckler & Koch, has a caliber of 4.6mmx30. The weapon has a weight of 1.6kg (3.5lb) and is 540mm (21 inches) long, 172mm (6.7 inches) high, and 42mm (1.6 inches) wide.



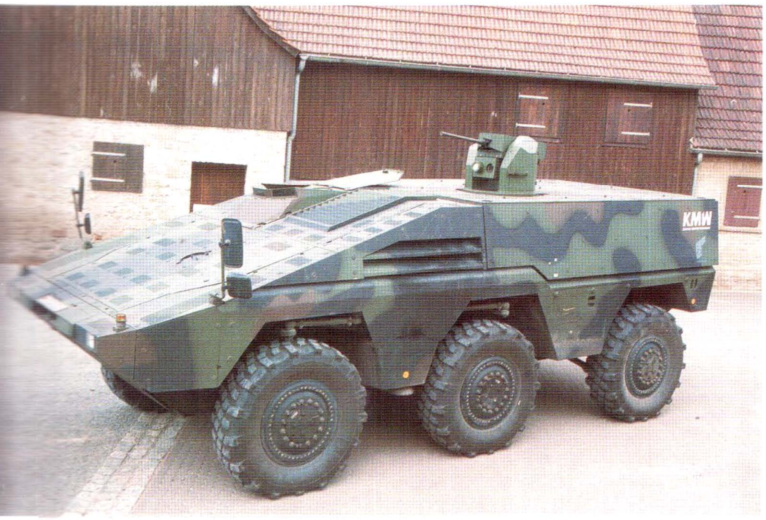
The Heckler and Koch 40mm Automatic Grenade Launcher will drastically enhance the firepower of the German infantry. The first weapons of this type were issued to the German ISAF troops in late 2002 and are currently used in Afghanistan. The weapon has a caliber of 40mx53, a V0 of 241m/s (790f/s) and a theoretical rate of fire of 350 rounds per minute. With tripod, the weapon weighs 29kg (64lb).



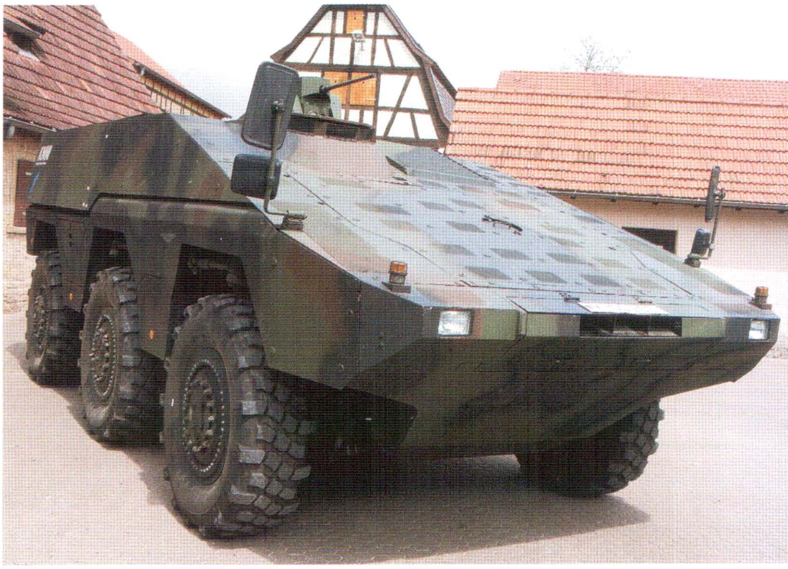
The Heckler and Koch 40mm automatic grenade launcher can be broken down into the weapon itself, the tripod and the ammunition box. In addition to HE and AP ammunition, non-lethal ammunition such as rubber bullets, CS/CN gas grenades and net ammunition can be fired. There is enough space in the ammunition box for 32 rounds, and the weapon can fire single rounds or bursts. The Bundeswehr *will also use the automatic grenade launcher mounted on vehicles such as the Fennek reconnaissance vehicle and the Dingo protected patrol vehicle.*



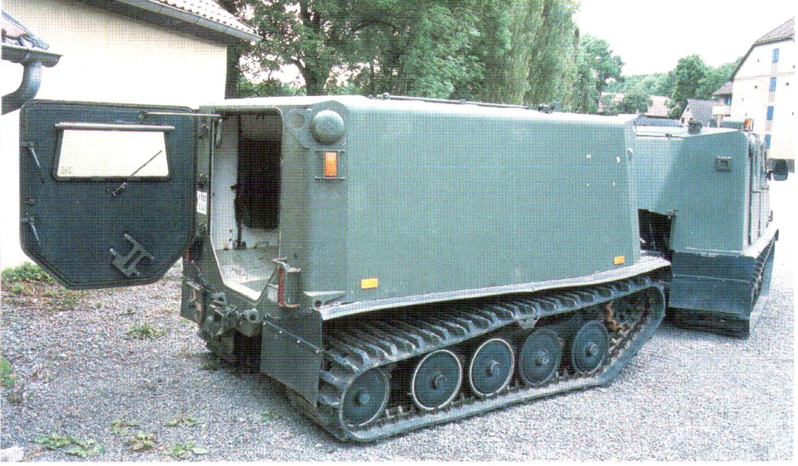
With the introduction in the near future of the new ballistic protected combat vehicles like the MRCV (Multi-Role Armored Vehicle), which can be seen in the background, the German infantry will step up from light forces to medium forces. This will also require higher mobility and flexibility from each individual soldier, which will be achieved by the personal equipment developed under the Infanterist der Zukunft program. The average weight of the soldier's kit during a mission will be reduced to approximately 30kg (66lb) from the current 47kg (104lb).



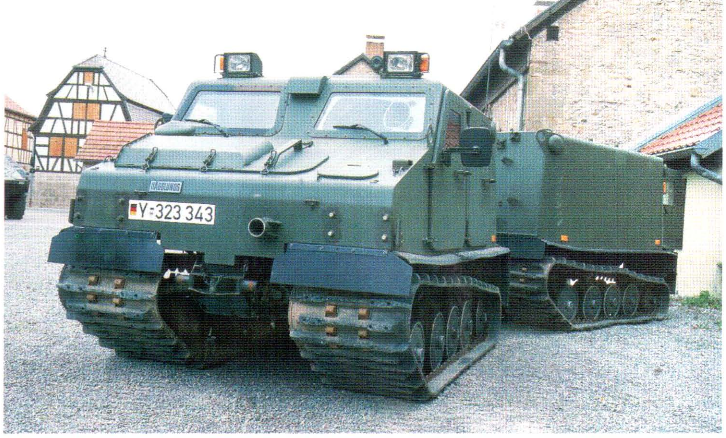
The new armored wheeled vehicle of the German infantry will be the Multi-Role Armored Vehicle (MRAV) made by Krauss-Maffai Wegmann (Germany) in co-operation with Alvis (Great Britain), Rheinmetal Landsyteme (Germany), and Stork (The Netherlands). While the German infantry will get the 8x8 version, the photograph shows the first prototype of the 6x6 version. The MRAV, which will have a combat weight of approximately 25 tons empty, could reach a top speed of 103km/h (64mph). With one filling of its fuel tank it will be able to cover a distance of 1050km (652 miles).



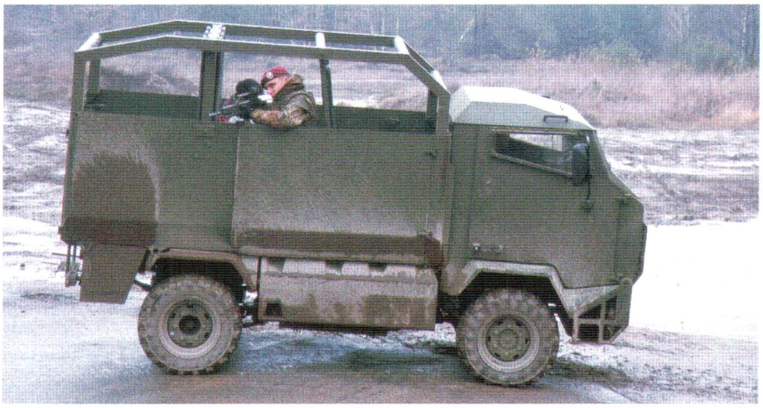
The interior capacity of the Multi-Role Armored Vehicle (MRAV) will be 14 cubic meters. This will be enough space for a crew of 11 soldiers and all of their combat equipment. The MRAV will be fully ballistic and mine protected. In German Army terms, the MRAV is called GTK (Gepanzertes Transport Kraftfahrzeug). The armament of the MRAV will consist of a roof-mounted 30mm grenade machine gun, a 12.7mm machine gun or a 7.62mm machine gun.



For the German Gebirgsjäger (mountain infantry), the vehicle of the future will be the BV 206S. Manufactured by Hägglunds Vehicles of Sweden, the BV 206S snow vehicle has a stunning cross-country capability. Together the front and rear cabs have a payload of 1670kg (3682lb) and there is enough room for 12 fully equipped infantrymen.



The BV 206S is powered by a STEYER M16 130kw engine. The engine is connected to a Daimler Chrysler W5A-580 automatic gearbox with five forward gears and one reverse gear. With a gross weight of 7000kg (15,435lb), the vehicle can reach a top road speed of 52km/h (32mph). The amphibious vehicle can be operated in temperatures ranging from –46°C to +49°C (–50°F to 120°F) without performance loss.



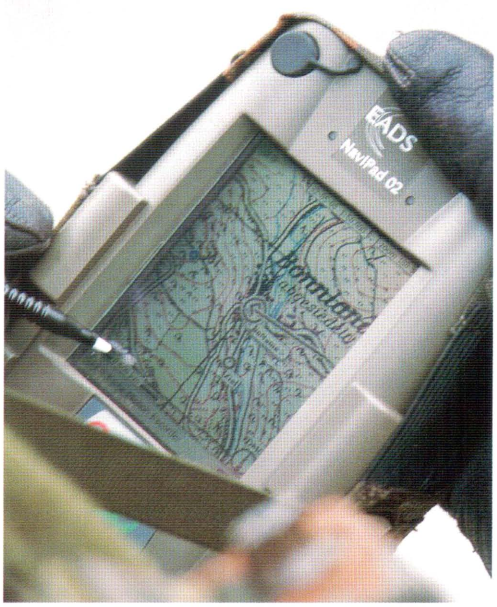
The ESK (Einsatzfahrzeug Spezialisierte Kräfte – *Special Forces operational vehicle) will soon become the transport of the German airborne forces. The ESK has a payload of 2000kg (4410lb) and its armor can stop a 7.62mm bullet and the blast of anti-personnel mines. A CH-53G can transport one ESK and its 10-man infantry section as an internal load. The ESK is powered by a 4-cylinder diesel engine that develops 78kw. This enables the ESK 4x4 vehicle to reach a top speed of 110km/h (68mph). The ESK is 2.25m (7.4ft) high, 1.85m (6ft) wide and 4.24m (14ft) long. For use as an internal load in a CH-53G, the roll cage can be taken down with quick-release technology. With one tank of fuel, the ESK has a road range of 500km (311 miles). The ESK will be manufactured by the German company Krauss-Maffei Wegmann.*

NaviCom – Communication and Navigation

In the *Infanterist der Zukunft* program, the command and control equipment is integrated onto the modular combat vest and consists of the following components:

- Section radio with integrated GPS receiver, located on the lower rear part of the modular combat vest.
- 2 accumulators providing 24-hour service, located on the back of the combat vest over the section radio.
- UHF antenna of the section radio system on the left shoulder.
- GPS antenna on the right shoulder.
- Personal Data Assistent (PDA) with NaviCom software.
- Controls for the radio equipment.
- Helmet-integrated headset, normal headset or handset.

The GPS-based Personal Data Assistant with its NaviCom software, in combination with the integrated digital map material, lets the soldier orient and navigate safely. The PDA can store the maps for an entire operational area, e.g., Kosovo. It also allows the soldier to create, receive, process, and send text and graphics on section level. In addition, the section radio is operated via the touch screen of the PDA. The test version of the PDA is manufactured by Compaq and uses civilian software. Additional sensors such as a laser range finder can be attached and information can be sent to higher command posts by wireless communication.



The GPS-supported Personal Data Assistant (PDA) with its NaviCom software provides the soldier quick orientation and accurate navigation by the use of the stored digital map material. In addition, the PDA allows the soldier to create, receive, process, and transmit text and graphics within the section. The test version of the PDA is made by Compaq and uses off-the-shelf software.

Each soldier of the *Infanterist der Zukunft* infantry section will have a section radio allowing him to receive and pass on orders, reports and information. All communication between the soldiers of a section should use this radio since it reduces noise, provides a larger communication distance, and keeps orders and missions secret from the enemy. For communication on platoon or company level, a second radio, either a SEM 52 or a SEM 70, is carried by the section commander. In the future, these will operate linked up and be controlled via the PDA with its NaviCom system. The GPS integrated in the NaviCom system allows the section commander to locate at any time the exact position of his soldiers. This makes it easier to give orders and assess situations and, at the same time, lowers the risk of friendly fire.

Given an ideal environmental situation, the section radio has a range of 13.78km (8.6 miles); in built-up areas this is reduced to approximately 700m (765 yards). The radio can be used with a headset integrated into the helmet, a normal headset or a handset. The 400-gram (14-ounce) section radio and the 1.2-kg (2.6-pound) battery pack are stored in the rear part of the modular combat vest. LI-accumulators are currently used as a power supply, but the use of fuel cell technology, which will also enhance performance, is planned for the future.

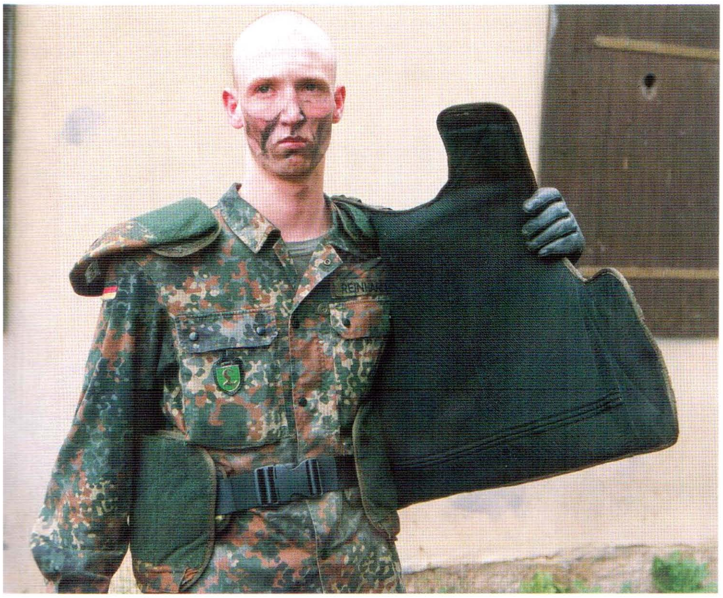
New Body Armor

The new operational options for the *Bundeswehr*, including peace support and peace enforcement missions, expose the soldier to enemy fire more than in the past. During patrols or at vehicle checkpoints, where deterrence by showing force is important, the soldiers are especially easy targets. This requires a high level of protection against small arms projectiles from new body armor. At the same time, the body armor must be lightweight in order to allow the soldier to carry out his duty without limitations for a long period. Body armor was introduced into the *Bundeswehr* in large quantities of 300,000 vests for the first time between 1984 and 1995. Developed during the Cold War, this 3.7-kg (8-lb) vest made of aramid was designed to protect the soldiers against the effect of splinters from Warsaw Pact artillery and, therefore, could not stop a small arms bullet, as is necessary today.

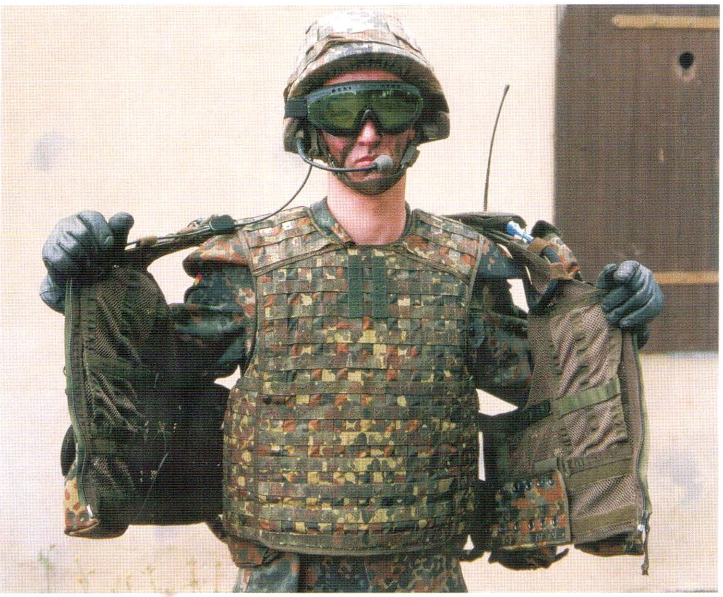
In order to protect its troops during peace support operations, such as those in Somalia, Bosnia and Kosovo, the *Bundeswehr* ordered body armor of the Bristol K10 and Bristol K18 types from the manufacturer Meggit Composites. These vests had a weight of 13.5kg (30lb) and offered a basic German Class 1 protection, and by using additional armor plates could be brought to German level of protection of Class 4. At the end of the 1990s, this body armor was replaced by a new version that was based on the Bristol K18 and incorporated a cover of *Bundeswehr* camouflage pattern, magazine pockets and attachment points for the *Bundeswehr* webbing system.

The new body armor was issued to the German troops operating outside Germany. However, all body armor showed the same problem: a heavy weight that restricted the soldier's mobility and perseverance. Because of this, completely new body armor was developed during the *Infanterist der Zukunft* program. This new body armor consists of a front and rear section that are held together by Velcro fastenings on the shoulders and body sides. A hip belt fitted with a Fastex buckle allows a high degree of carrying comfort. The use of nylon mesh on the inside of the body armor allows for better heat management. The body armor can also be fitted with a lower protection panel and a collar. The cover of the new body armor is made of Codura to which the vertical and diagonal straps for attaching the pockets are sewn. This enables the wearer to attach pockets for equipment according to his needs and the given task.

The ballistic panels of the new body armor have DIN 31004 German Class 1 protection. This means they protect the wearer against soft-core full metal jacket bullets with a weight of 8g and a V0 of 400 to 420m/s (1312 to 1378 f/s), fired from small arms such as pistols or submachine guns up to a caliber of 9mmx19 Luger. If the ballistic plates are placed in the front and rear panel, the protection level is brought up to Class 4. This means that now the body armor will resist a hard-core full metal jacket bullet with a V0 of 810 to 830m/s (2658 to 2723 f/s) and a bullet weighing 9.75g fired from a rifle up to a caliber of 5.62mmx51. In the future, Kevlar material used the in the trial version of the body armor will be replaced by PBO, which will bring the weight down another 20%. The ceramic plates that are currently being used are made of aluminum oxide and have a weight of 2.9kg (6.4lb) per plate. They will someday be replaced by plates made of silicone carbide weighing 2.2kg (5lb) per plate. The total weight of the new body armor will be 9.7kg (21lb), which will be a big advantage over the 13.5-kg (30-lb) weight of the body armor currently in use. The new body armor will not only provide the same protection against enemy fire, but it will also feature added knife thrust protection.



The modular body armor consists of a front and back panel to which a collar and a lower protection panel can be attached. Without additional plates, the body armor has a German Class 1 protection level. When the ceramic plates are used, the protection level is raised to a Class 4 protection level. A hip belt fitted with a Fastex buckle allows a high degree of carrying comfort. The use of nylon mesh on the inside of the body armor allows for better heat management. The body armor can be fitted with a lower protection panel and a collar.



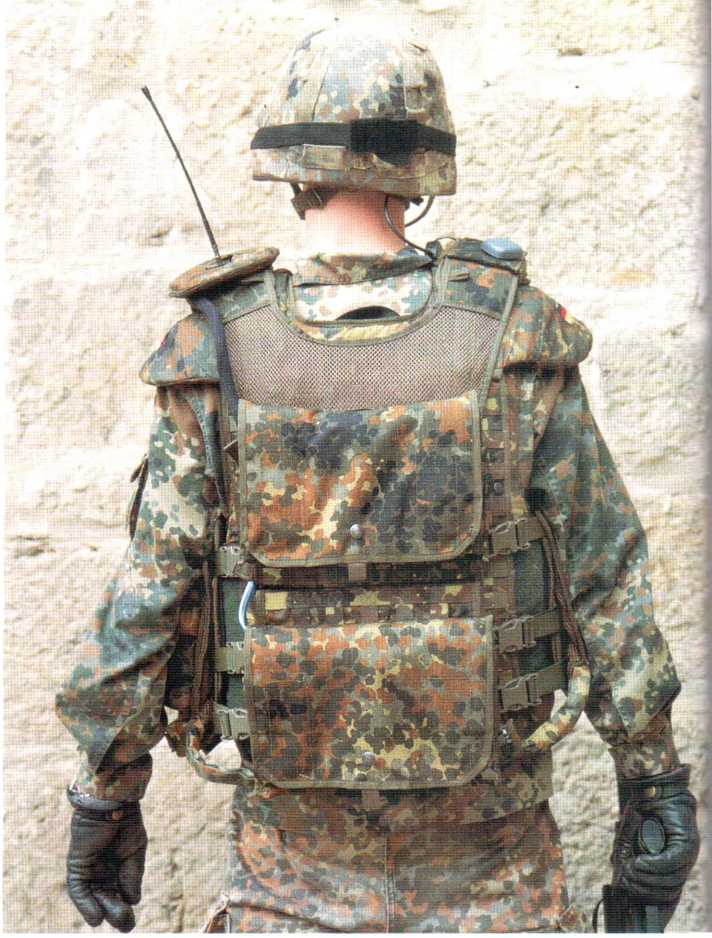
The inside of the modular combat vest is made of nylon mesh for better air circulation. A 1.7-liter (.5-gallon) camel bag is integrated into the vest. Its snorkel can be seen on the upper left side of the vest.

he new body armor issued to the German infantryman can be fitted with a collar segment. Crewmembers of armored vehicles will be trading their heavy body armor for the new separate collar segment of body armor when they operate their vehicle with open hatches, since the soldiers are only exposed from the shoulders upward in such a situation.

Modular Combat Vest

One key element of the *Infanterist der Zukunft* equipment is a modular combat vest or load-bearing vest. The vest consists of a one-piece front and rear part held together by adjustment straps at the sides that allow for adjusting the vest easily and quickly to the wearer's size, as well as to the bulk of the clothes and body armor he wears underneath. The interior of the vest is made from mesh nylon, the outside from Codura in German army camouflage pattern. Straps for fastening the pockets are sewn crosswise on the outside straps. Pockets for magazines, 40mm ammunition, tools, etc. can be mounted horizontally or diagonally on this system according to the wearer's needs. A pocket can be mounted by weaving the fastening straps sewn to the pocket into the crossed straps of the vest. This may sound complicated and fragile but, in reality, it is simple to use and extremely hard wearing. The pockets, which are made of Codura, are closed with Velcro and plastic fasteners. The vest is closed by means of a zipper at the front. Two map pockets, which are placed in the body of the vest, are located to the left and right of the zipper. A separate zipper secures the right pocket and Velcro closes the left one. These pockets were designed for the storage of maps, notebooks and other papers.

All parts of the section radio system and the navigation system are incorporated into the modular combat vest. The only equipment that has a fixed place on the vest is the section radio and the power supply, both of which are situated in the lower area of the back part of the vest. Two 10-liter (2.6-gallon) day sacks are mounted above the pockets that carry the radio and its power supply. Spare clothing, a mess tin, additional ammunition, food, spare batteries, etc. can be stored within these sacks. A 1.7-liter (1.8-quart) camel bag, which can be mounted based on the user's requirements, is also part of the modular combat vest. With a standard set of pockets, the modular vest has a weight of 6.8kg (15lb). This includes two utility pouches, four magazine pouches, two day sacks, the PDA pocket with the PDA, the section radio with cables and antenna, the GPS with antenna, the empty camel bag, and control element. The weight of the vest will be further reduced prior to its introduction in 2004.

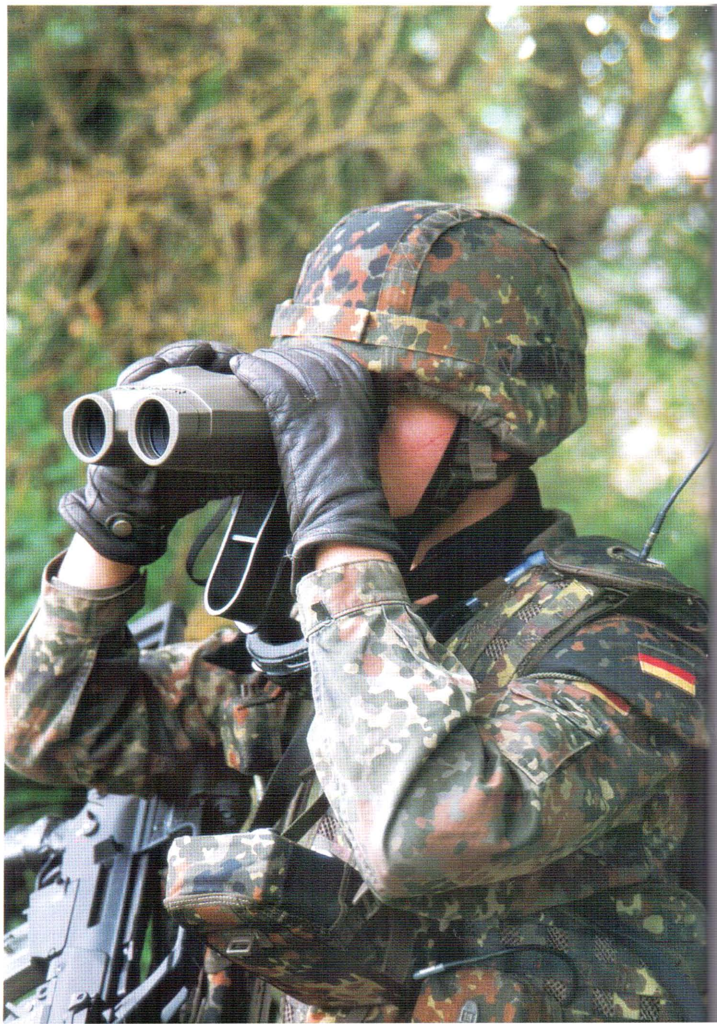


The two day sacks positioned above the radio and power supply at the rear of the modular combat vest can be used to store personal equipment such as a mess tin, food, additional clothing, and so on.

Leica Vector IV

Already in use with the German army sniper teams, the Leica Vector IV is a set of binoculars with integrated laser range finder, digital compass and inclinometer. In the future, every infantry section commander will be equipped with the 1.7-kg (3.7-lb) field glass with 7x magnification, objective diameter of 42mm (1.6 inches) and adjustable dioptre control from –4 to +4. The laser range finder uses an eye-safe Typ 1550nm Class 1 laser. At a distance between 5m and 6000m (16ft and 6558 yards), the accuracy of the range finder is +/-2m. To demonstrate the capabilities of the Leica Vector IV, the manufacturer gives the following example: With a 20-km (12.4-mile) sight line, an 8x8-meter (28x28-ft) target that is 4000m (4372 yards) away can be detected with the first measurement with a probability of 90%. The time for the measurement will take between 0.3 and 0.9 seconds.

The body of the Leica Vector IV is made of a robust alloy construction covered by a rubber coating. It has a volume of 1.9 liters (2 quarts), is 20.5cm (8 inches) long, 17.8cm (7 inches) wide and 8.2cm (3.2 inches) high. A _-inch screw thread on the bottom allows for adding a tripod. The system is waterproof up to a depth of one meter and can be operated without loss of efficiency in temperatures ranging from –35°C to +63°C (–31°F to 145°F). Via a bluetooth interface, data can be transferred from the Leica Vector IV directly to the PDA where the distances measured by the laser range finder can then be directly shown in the map. A 6-volt LI battery of the 2CR5 type powers the Leica Vector IV. Using the Leica Vector IV, a section leader can not only measure the distance from his position to a target, he can also measure the distance between two remote points, as well as their altitudes. The measurements are mirrored into the field of vision.



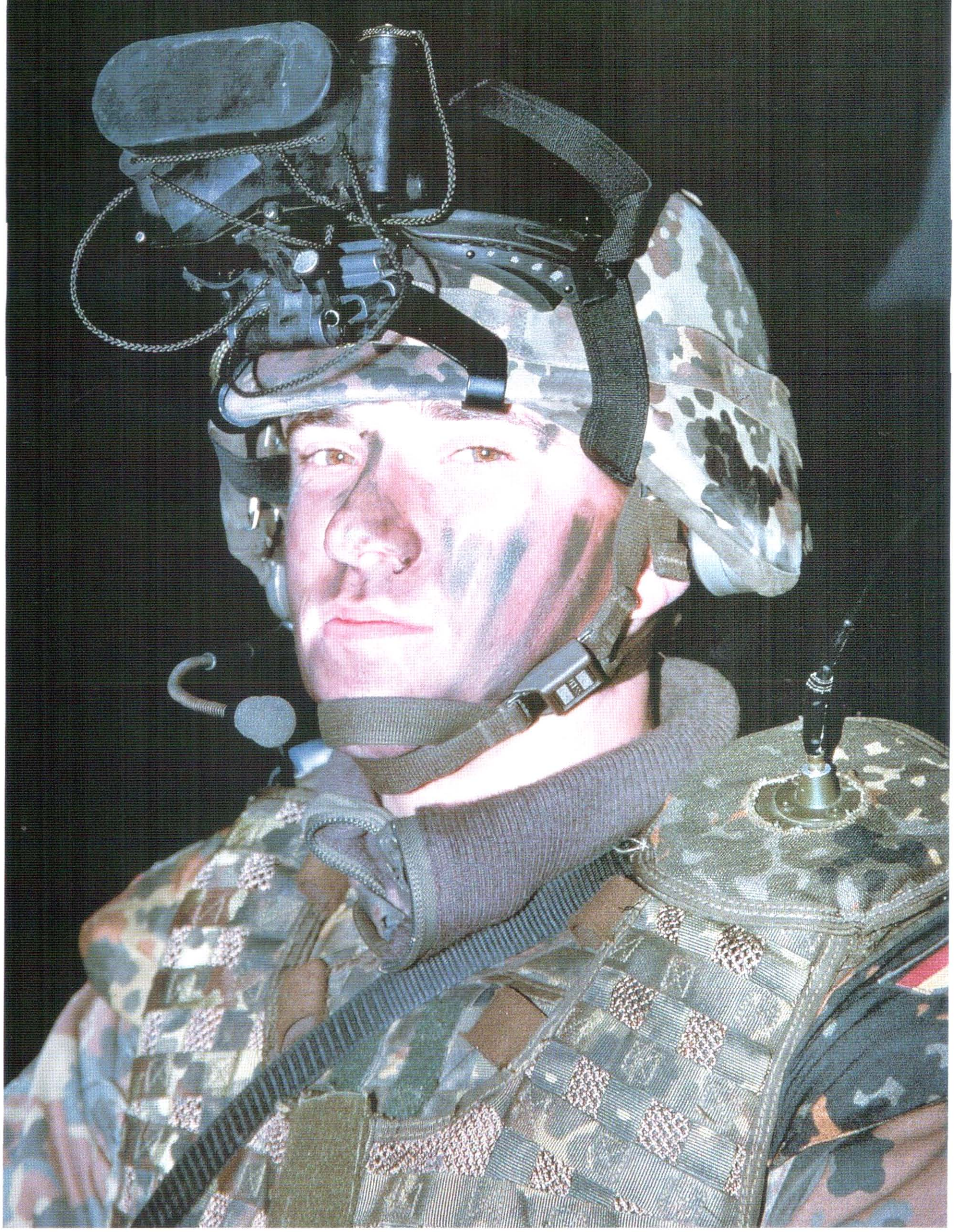
The 1.7kg (3.7lb) Leica Vector IV combines binoculars with x7 magnification with a laser range finder and a digital compass that gives azimuth and gradient. The integrated bluetooth interface in the Leica Vector IV makes it possible to transmit data from the binoculars to the PDA. After transmission the data can be directly shown in the map on the PDA.

LUCIE Night Vision Goggles

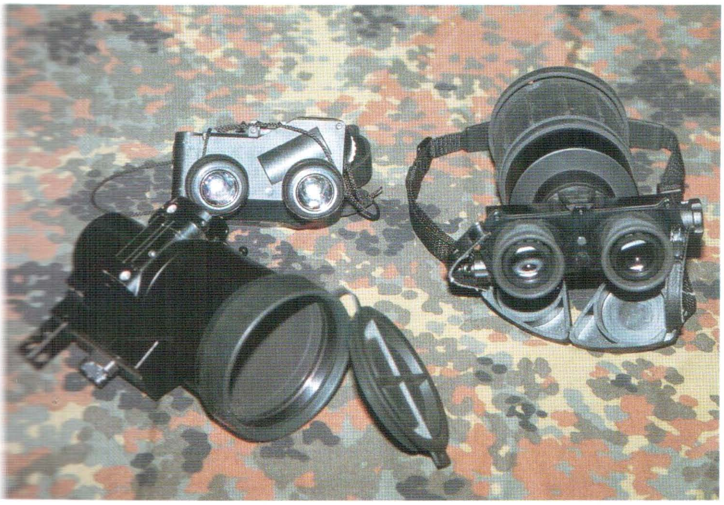
Once the *Infanteristen der Zukunft* program is implemented, the German infantry will be fully night-fighting capable. To achieve this, the section will be equipped with eight NSA 80 night vision attachments and two thermal imaging sights. In addition, each soldier will have a pair of LUCIE night vision goggles. Made by THALES, the binocular goggles have a field of vision of 51° and a x1 magnification. Lenses with x4 and x6 magnification can be easily attached to LUCIE. LUCIE has a weight of 360g (12.6 ounces) and measures 130x80x79mm (5x3x3 inches). The dioptre control allows adjustments from –5 to +3.

For a power supply, 1.5-volt alkaline-, Ni/Cd - or LI-batteries of the AA type can be used. With these batteries, LUCIE has an operational time of 60 hours. It is also possible to operate LUCIE with a 3.6-volt Lithium battery, which provides an operational time of 100 hours. A battery charge indicator allows for controlling the remaining battery power so that the batteries get changed in time. LUCIE can be operated without loss of quality in a temperature range from –30°C to +45°C (–22°F to 113°F). Thanks to the waterproof construction of LUCIE, the NVG can be used in maritime environments, as well as in tropical climates. The HyperGen XD-4 receiver with a picture quality of 1.1 billion pixels is used inside LUCIE.

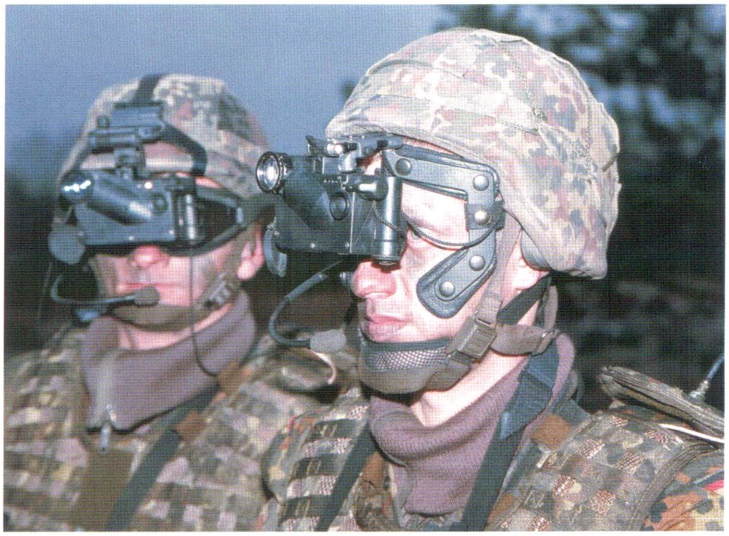
During operations, the NVG can either be worn attached to a facemask or mounted to the helmet with a special adapter. In both cases, the goggles are attached by a quick-release attachment; a flip mechanism allows for turning the goggles up to see without them. When flipped up, an automatic switch-off saves battery power. Due to its small size and light weight, LUCIE affords its wearer high comfort while at the same time enabling him to fulfil his mission even at night or when visibility is poor.



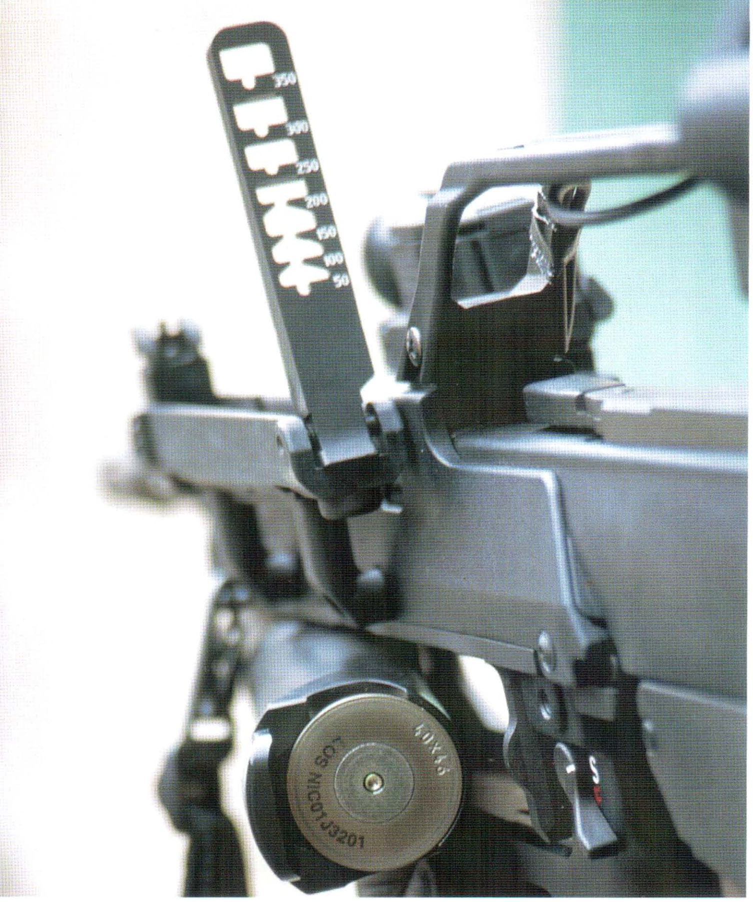
The LUCIE night vision goggles can be flipped up by means of a special mechanism when not needed. When flipped up, an automatic switch-off saves battery power. Here the LUCIE NVG is worn with the helmet adapter.



With the Infanterist der Zukunft *program, the German infantry section will become 100% night-fighting capable. In addition to having two thermal weapon sights in the section, each soldier will be equipped with the LUCIE NVG (rear left) and the night vision attachment for small arms, the NSV 80 (front left), which can be fitted to the sight of the G36. In the right foreground is the Leica BIG 35 night-vision binocular, which is also being tested within the* Infanteristen der Zukunft *program.*



This photograph shows the LUCIE NVG being worn in two configurations. The LUCIE NVG in the foreground is worn with a special lightweight facemask. The LUCIE NVG in the rear is worn with an adapter mounted on the soldier's helmet. LUCIE has a weight of 360g (12.6oz) and measures 130x80x79mm (5x3x3in).



AG36 Grenade Launcher

Today each German infantry section is equipped with a *Granatpistole* HK69 40mm grenade launcher. In the German infantry section of the future, three AG36 40mm grenade launchers mounted under the foregrip of the G36 rifle will replace this weapon. The AG36, a private venture of Heckler & Koch, was built after intensive market research. The weapon can also be mounted under the Colt M-16 or the Diemaco C7 and C8. In the case of the G36, the foregrip of the weapon is replaced with a new part to which the grenade launcher is fitted, together with its ladder sight. The open ladder sight incorporates aiming increments for 50m, 100m, 150m, 200m, 250m, 300m and 350m. The break-action barrel that swings to the left allows for loading 40mm rounds of any length. The barrel has a length of 280mm (11 inches).

Thanks to its compact size (90-mm [3.5-inch] width, 210-mm [8.2-inch] height, 350-mm [14-inch] length) and its weight of 1.5kg (3.3lb), the AG36 fits well under the foregrip without troubling the user. The pistol grip of the AG36 is fitted with a safety catch with settings for safe (S) and fire (E). The 40mm round develops a V0 of 80-120 m/s (263-394 f/s). A wide range of 40mmx46 ammunition can be used with the AG36. Ammunition types available include HE, AP, CS, non-lethal, and flares. The non-lethal ammunition will become especially valuable for the soldiers operating in peace support scenarios.

The AG36 40mm grenade launcher uses a ladder sight that consists of the foresight and several aiming marks. The break-action barrel mechanism of the grenade launcher swings to the left to allow the soldier to load 40mm rounds of any length. The barrel has a length of 280mm (11 inches). Here an AG36 can be seen mounted under the foregrip of a G 36 assault rifle.

Thermal Imaging Technology on Section Level

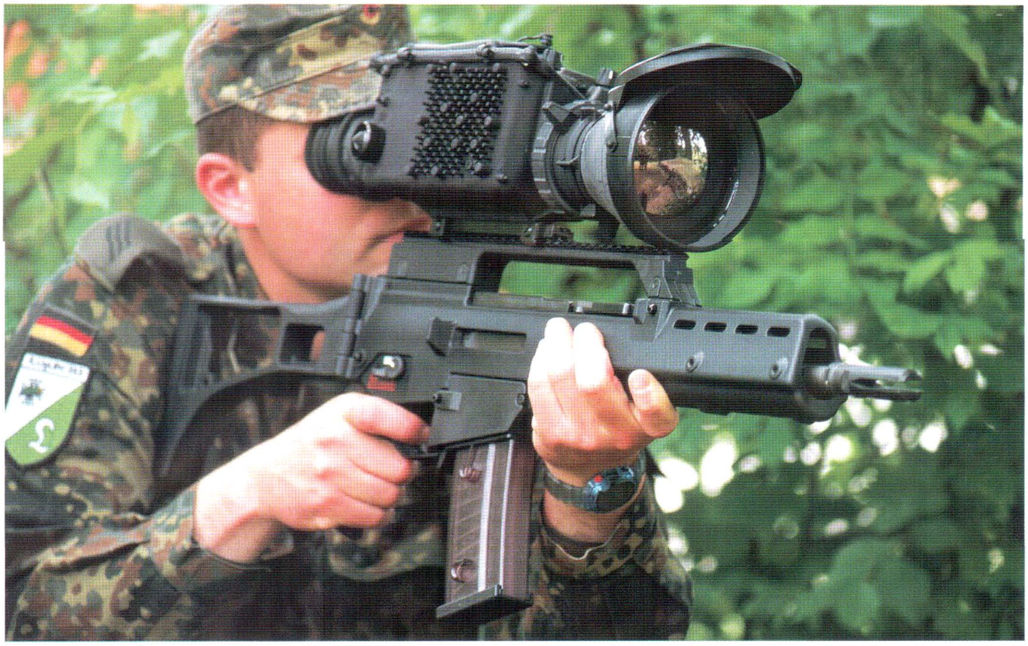
When the *Infanterist der Zukunft* program is introduced, thermal-imaging technology will be available on infantry section level for the first time in the *Bundeswehr*. Presently, the only weapons in the infantry units of the *Bundeswehr* that are fitted with thermal imaging sights are anti-tank weapons such as Milan with its MIRA or the TOW with the AN/TAS 4. These are usually deployed on platoon or company level. In the future, each section will be equipped with two TWS AN/PAS-13A(V) thermal weapon sights.

The TWS AN/PAS-13A(V) is a 2.5kg (5.5lb) thermal sight for light infantry weapons. The system operates in a spectrum between 3.4µm and 4.2 µm. A thermoelectrically cooled PV-HgCdTe 40x16 detector is used in the sight. The system, which can be operated in viewing fields of 9°x5.5° and 3°x18°, uses a polygon scanner with 4:1 interlace.

The casing and other mechanical components of the TWS An/PAS-13A(V) are made from carbon fiber reinforced plastic. The TWS AN/PAS-13A(V) is 45.7cm (18 inches) long, 14cm (5.5 inches) wide and 15.5cm (6 inches) high. The thermal sight can be used without limitations in operational temperatures from –37°C to +49°C (–35°F to 120°F). At a temperature of 23°C (73°F) and with a stand by time of 71%, the TWS AN/PAS-13A(V) has an operational time of approximately 12 hours with one battery. Six VDC batteries with 7.5 Ah power the sight. During stand-by, the sight has a power consumption of 2.7 W, 9.8 W when in use.

The sight features pre-set sighting configurations for the common German infantry weapons and can therefore be mounted on every weapon of the section – even the sniper rifles. The TWS AN/PAS-13A(V) is mounted on the Weaver rail of the weapon. Currently, the G36 of the *Bundeswehr* does not feature such a rail, but it will be added to the G36 with the introduction of the *Infanterie der Zukunft* program.

In addition to functioning as a weapon sight, the TWS AN/PAS-13A(V) can be used as an observation scope. In this operational mode, mounted on a tripod and using the large field of vision, the thermal imaging system has an identification range of 1350m (1476 yards). The TWS AN/PAS-13A (V) is produced by the German company Zeiss Optronik GmbH teamed up with Raytheon Systems Company in the USA.



Here the thermal weapon sight TWS AN/PAS-13A(V) can be seen mounted on a G36. The sighting configurations of different weapons such as the G36 or the G22 are pre-set inside the TWS AN/PAS-13A(V), which allows for mounting the sight onto different weapons in the infantry section.

LES TROUPES DE MARINE

The French Marines

Yves Debay

A VBL from the 1st RIMa hits the beach during Exercise "Ardente" in Italy. Each platoon in each squadron is equipped with four VBLs and four AMX-10 RCs.

History and Traditions

In 2000, the *Troupes de Marine* (TDM), the French Marines, celebrated the 100th anniversary of their association with the regular French land forces. Indeed, in 1900, the colonial troops under the Ministry of the Navy passed to the control of the War Ministry. But the TDM has older roots. A brief historical review is helpful in understanding the motivation of these modern soldiers. Proud of their branch of service, they, like the Foreign Legion, cultivate an *esprit de corps* that is maintained by traditions and the memory of passed acts of bravery performed by veterans of long ago.

In 1622, the Duke de Richelieu created the *Compagnies franches de la Marine* (Independent Marine Companies) to serve on the vessels of the King and to supply landing troops. It was at this time that two nicknames were given to the infantry troops and the naval gunners. The sailors would call the Marine ground troops *marsouins* (literally "porpoises") because they performed no work on board ship and spent the voyage basically following the vessel like porpoises. The Marine gunners were called *bigors*, an abbreviation of the word *bigorneau*, which is a small shell that remains fastened to the cliffs, just as the artillerymen were stuck to their coastal defense guns. The *Compagnies franches de la Marine* would go on to participate in wars against the English in the Antilles, India, Canada, and in America during the War of American Independence. During the latter conflict, they took part in two famous victories, Ticonderoga and Yorktown.

In 1831, the name *Troupes de Marine* was adopted, and the Marines participated in the conquest of Algeria and the Crimean War (1854). Regrouped into a unit called the *Division Bleu* (Blue Division), the TDM conducted themselves brilliantly in the disastrous war against Prussia in 1870. During this campaign, the famous "House of the Last Cartridge" episode took place at Bazeille. Surrounded by superior forces and called upon to surrender, the *marsouins* fought to the last cartridge. Every year since then on August 30, the event is commemorated in every garrison of the TDM.

It was the conquest of the French colonial empire at the end of the 19th century that gave the *Troupes de Marine*, who were renamed the Colonial Troops, the spirit they have retained to this day. Despite numerous other military exploits, it was the highly rated image of the troops as empire builders that is preserved, an image of a few French officers and their native troops risking their lives for the tri-color flag in distant untamed lands. The soldiers at the time were conquerors, but they were also doctors, diplomats and builders. The colonial infantry distinguished itself in Morocco, Central Africa, Madagascar, and Indochina.

The First World War saw Arab, Indo-Chinese and African soldiers (generally referred to as *Tirailleurs sénégalais* – Senegalese infantrymen) die by the thousands in the muddy trenches. Troops of the Colonial Army and the Foreign Legion in their khaki uniforms and the French national troops wearing horizon blue were involved in every major battle. In Verdun in 1916, the RICM (*Régiment d'Infanterie Coloniale du Maroc* -Colonial Infantry Regiment of Morocco) employed a bayonet charge to recapture the fort of Douaumont.

Twenty-five years later, the French Army was crushed by the German *Blitzkrieg* (lightning war) and the country was swiftly occupied. But throughout the French empire, people raised themselves up under the colors of the "Colo" to fight for a free France at Bir Hakeim (1942), Tunisia (1943) and Monte Cassino (1943), and in France itself to free their mother country. The RMT (*Régiment de Marche du Tchad* – Marching Regiment of Chad) began the war in Chad and finished it by occupying Berchtesgaden, Hitler's Eagle's Nest in the Bavarian Alps.

The wars in Indochina (1946-54) and Algeria (1954-61) saw Senegalese infantrymen and the Moroccan and colonial parachutists fight for France in overseas territory for the last time. Colonial history has come to an end, but the spirit lives on with the troops of the modern *Troupes de Marine*. Today the soldiers attached to the TDM have a nickname for their unit, "*la Colo*", in memory of the colonial troops.

The Sun Never Sets on the *Troupes de Marine*

At the beginning of the new millennium, the TDM was still a recognized corps designed to operate overseas during amphibious or airmobile operations, with 36 units dispersed around the world. Sixteen thousand professional soldiers, proud of their dark blue beret with its golden anchor, serve within the French land forces. This includes 1640 officers, 5585 non-commissioned officers and 9078 soldiers. Serving in the motorized and mechanized paratroop infantry, the artillery, the armored Light Cavalry, and communications units, the *marsouins* and *bigors* make up a significant portion of the professional regiments situated in metropolitan France. They also participate widely in missions involving deployed forces, sovereign forces, adapted military service, and the military's Cooperation of Defense.

Considered elite units, a number of regiments have participated in overseas operations led by France during the last several years. *Marsouins* operated shoulder to shoulder with the Legionnaires (their rivals!), in Chad, Lebanon, the former Yugoslavia, and in the Gulf War. Carrying high the colors of the *Troupes de Marine*, Colonel Thorette, the leader of the TDM Task Force in the Gulf, urged clearly over the radio before the assault on Al-Salman in Iraq, "All '*Colos*', forward to the enemy!" Then, in a cloud of dust raised by explosions, troops in dozens of armored vehicles hurled themselves at the enemy positions and conquered them. Some years later, in Sarajevo, a company from the 3rd RIMa (*Régiment d'Infanterie de Marine* – Marine Infantry Regiment) assaulted a position that the Serbs had captured by treachery the night before. The struggle ended in a hand-to-hand fight and the bunkers being cleared out with hand grenades. Two *marsouins* were killed, and the Serbs lost five people killed and four taken prisoner. Thus the honor of the UN was avenged.

Organization

Currently, two main groups exist in the TDM: 1) troops who serve within the territorial boundaries of France and who, depending on their specialty, may be sent abroad and 2) troops who are permanently stationed overseas. The latter serve as garrison troops in the French territories of New Caledonia, Guyana and the Antilles or are stationed in countries that have military defense agreements with France, such as Djibouti and Senegal. In many small African nations, the presence of a French garrison not only offers security and stability, but also guarantees the local economy.

In France
CMIDOME

AMX-10 RCs and marsouins of the 1st RIMa are seen in action at a firing range in Mourmelon, France. Three or four times a year the armored crews of the TDM practice live firing at a military camp. The AMX-10 RC is a good compromise between firepower and mobility.

An AMX-10 RC belonging to the 2nd Company, 1st RIMa venture down a road near Jablanica in Bosnia during the IFOR deployment in 1996. The vehicle is patrolling a "hot spot" where fighting can erupt at any time between Muslims and Serbs. Note the additional armor plates attached to the reconnaissance vehicle.

All of the TDM is administrated by the CMIDOME (Military Center of Information and Documentation for Overseas and Foreign Countries). This unit, which is located in Versaille, a suburb of Paris, has several missions. It is the center of management, an information office and the guardian of the traditions for the TDM, and it is tasked with the operational preparation of the French troops, whether they are Marines or other units, for future overseas or foreign deployment. In 1999, 7000 people benefited from their support.

9ème Brigade Légère Blindée de Marine (9ème BLBMa) - 9th Marine Light Armored Brigade

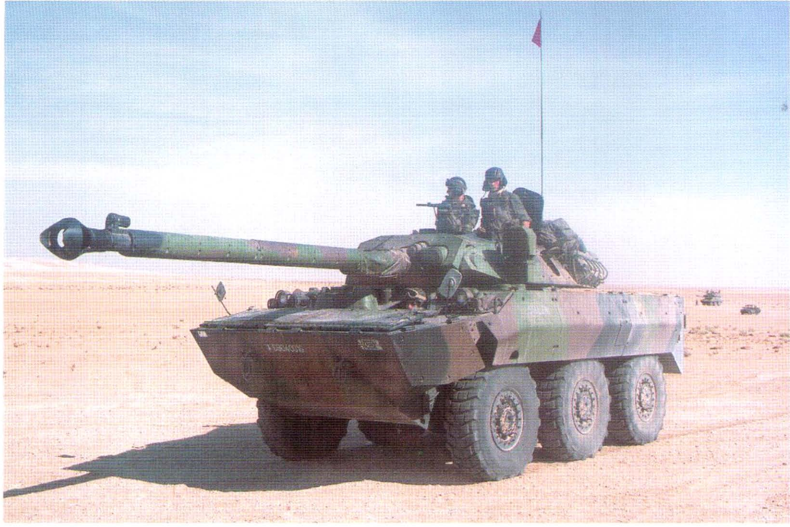
The 9th Marine Light Armored Brigade consists mainly of descendents of the Blue Division, *marsouins* of the 1st, 2nd, and 3rd Marine Regiments and the *bigors* of the naval guns, who became famous during the fight at Bazeille. The secondary origin of the unit is the 9th Division of colonial infantry created in Algeria in 1943, which landed on the island of Elba and in Provence in 1944 before fleeing Alsace. In November 1945, the 9th Division joined the fight in Indochina where the regiments were engaged in a variety of sectors. Becoming the 9th Marine Division in the 1980s, it was mainly made up of amphibious French troops. It was renamed the 9ème BLBMa in July 1999. Today, lightly armored, amphibious, autonomous, and mobile, the 9ème BLBMa is available on a moment's notice.

The unit's commitment level is flexible and can cover many types of action. The 7700 people who make up the Brigade are specialists who use the most modern equipment and materials. Every one is primed for action, always available and ready to serve anywhere in the world. For instance, the Brigade was engaged in both the Gulf War and the fighting in the former Yugoslavia. The Brigade contains a staff of six prestigious regiments: the1st, 2nd, and 3rd RIMa, RICM, 11th RAMa, and 6th RG (*Régiment de Génie* – Engineer Regiment).

1er Régiment d'Infanterie de Marine (1er RIMa) – 1st Marine Infantry Regiment

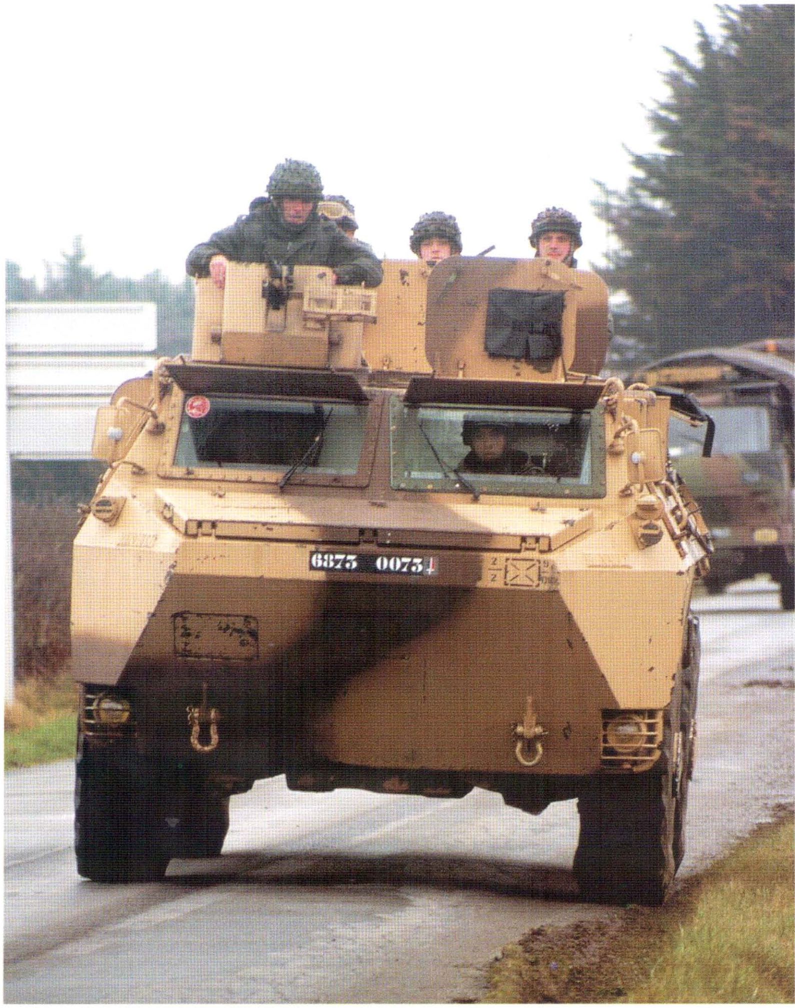
The oldest regiment in the TDM, the 1st RIMa, is particularly proud of its prestigious heritage and its vast experience accumulated over two centuries on every continent. Based in Angoulème, it is part of the 9ème BLBMa and forms one of the two light armored regiments. Its missions are information gathering and armored combat. It numbers 1018 people equipped with 48 AMX-10 RC armored cars, 30 VABs, and 54 VBLs, including six VBL MILAN.

The 1st RIMa is organized with a command and logistic squadron, a recce and investigation squadron, four combat squadrons, a base and instruction squadron, and a professional regiment as a reserve unit. The Regiment was committed to Croatia (1992), Chad (1993), Sarajevo (1995), Bosnia (1998), and Kosovo (2000).



This AMX-10 RC from the 1st RIMa is also fitted with additional armored plates. It is shown here as it appeared during Exercise "Pearl of the West" in Kuwait. Every year French forces conduct exercises in the Persian Gulf, and the TDM is well suited for it thanks to their flexibility and the knowledge they gain from overseas experience.

Marsouins of the 2nd RIMa engage in some exercises in the French province of Brittany. Training in bad weather makes good soldiers. The weather conditions in Brittany, where the 9th Marine Brigade is stationed, is very similar to those on the other side of the English Channel where the Royal Marines are trained.



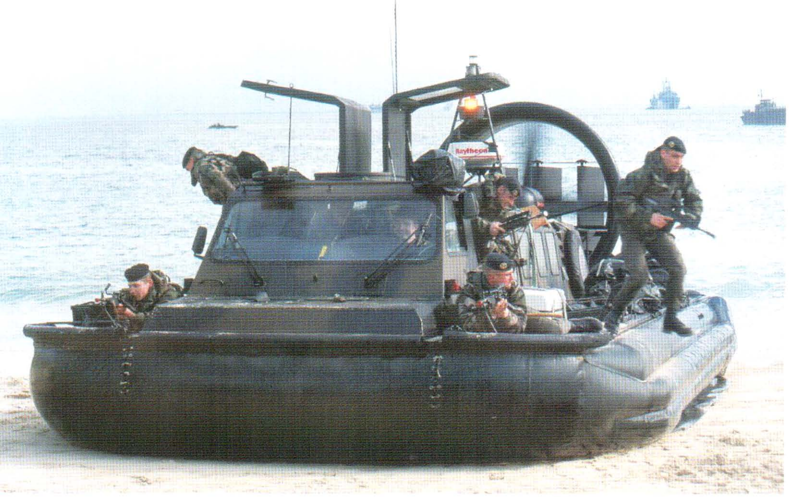
The 2nd RIMa is a motorized regiment equipped with VAB armored personnel carriers. The VAB seen here is painted in a desert camouflage pattern that contrasts with the lush green training environment.

2ème Régiment d'Infanterie de Marine (*2ème RIMa*) – 2nd Marine Infantry Regiment

Basking in the aura of its prestigious history and with 15 battle honors on its flag, the 2nd RIMa is among the most advanced units among the land forces. Always in the breach, every year the regiment of motorized armored infantry deploys 60% of its actual forces to every theater of operation.

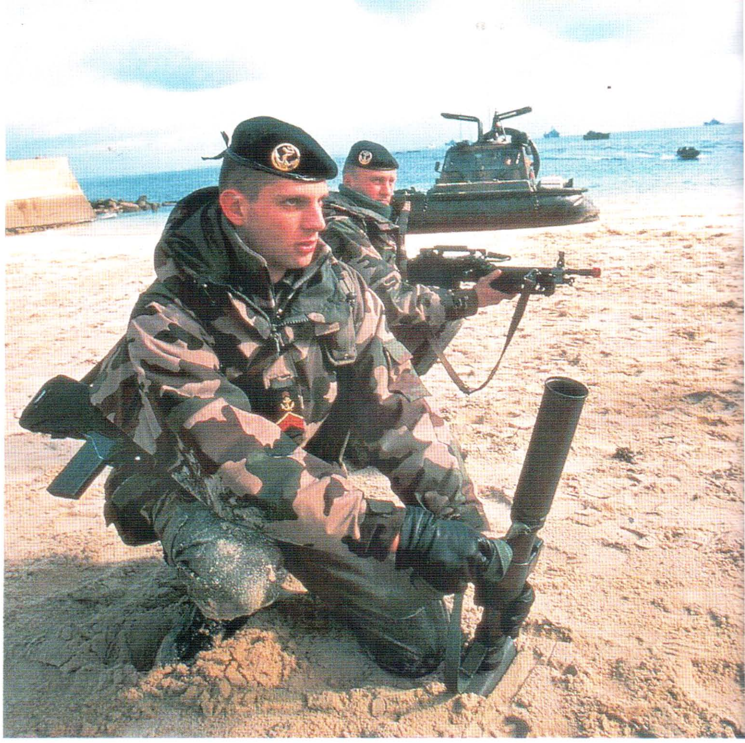
The Regiment consists of a command and logistic company, a reconnaissance and fire support company, four combat companies, a base and instruction company, and a professional regiment as its reserve unit. At its disposal and ready for action are 82 VABs, 10 VBLs, 16 MILAN launchers, 24 Eryx, six 120m mortars, and six 81mm mortars. The Regiment participated in Operation Daguet (Gulf War) in 1991, served four tours in Yugoslavia, and two in the Central African Republic.

After performing an amphibious landing in the fog, elements of the 2nd RIMa "conquer" Belle Ile during Exercise "Archipel". Note the Minimi light machine gun used by the troops. During exercises in continental France, the green Central European combat dress is worn. Camouflaged uniforms are reserved for actual combat missions.



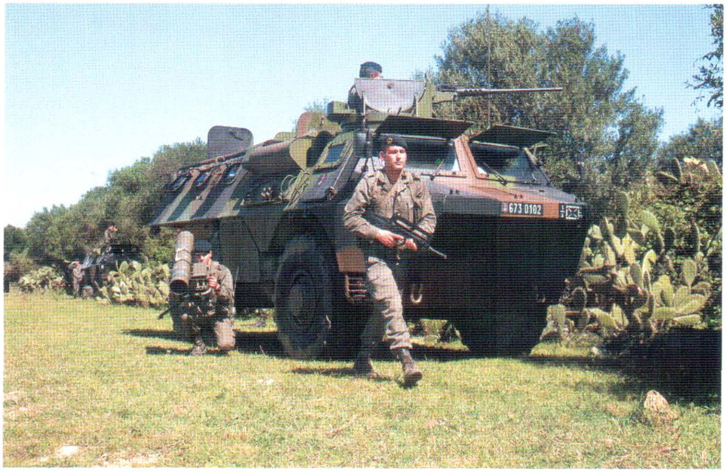
"Strong Resolve 98" was a very large NATO exercise conducted to prove that the Atlantic Alliance could be deployed on two fronts. French marsouins practiced rigid raider and hovercraft operations with the famous Royal Marines.

During Exercise "Strong Resolve 98", which began in Brittany, the 2nd RIMa was involved in amphibious operations with the 3rd UK Commando Brigade.

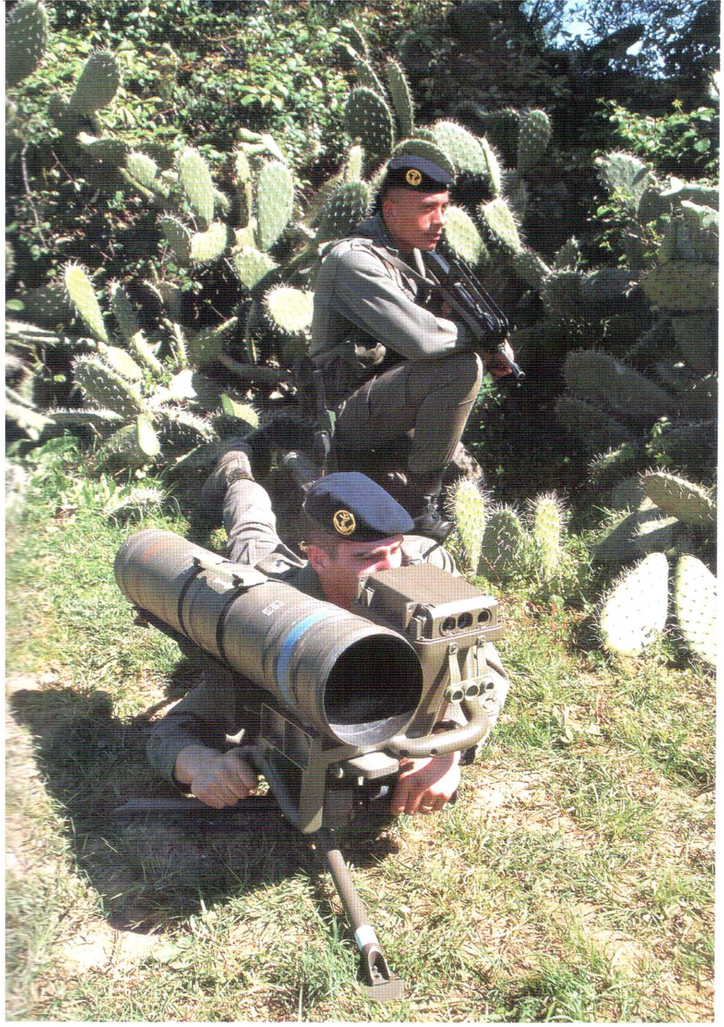


French marsouins of the 2nd RIMa employ the new 45mm LGI (Lance Grenade Individuel – Individual Grenade Launcher) during "Strong Resolve 98". Note the hovercraft in the background.

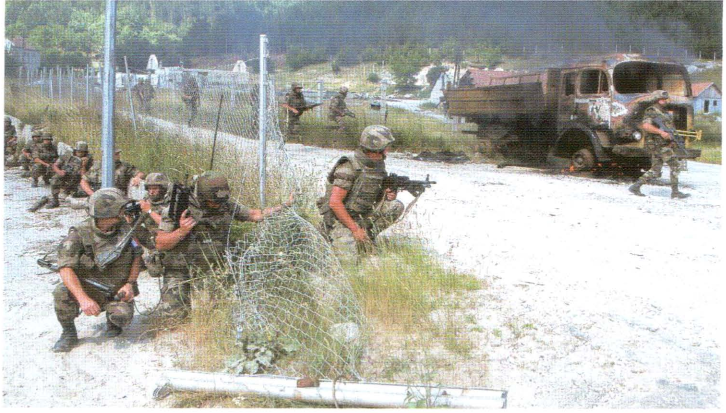
Marines from the 2nd RIMa disembark from LARC amphibious vehicles arriving at the landing dock of the LPD ship La Foudre *during Exercise "Strong Resolve 98".*



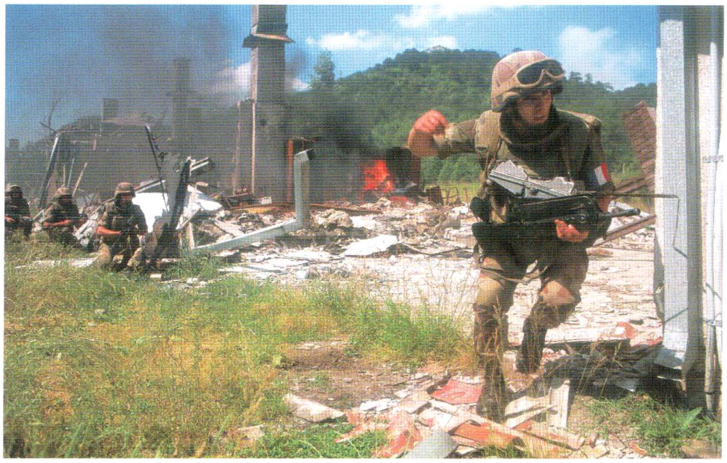
During the second phase of Exercise "Strong Resolve 98", NATO amphibious troops made a landing in the south of Spain. Here an Eryx team from the 2nd RIMa exits a VAB.



The Eryx is a powerful antitank weapon with a range of 50 to 800 meters (55 to 874 yards) that can be fired from inside a house.



Bosnia 1996. The cease-fire was just signed but the country was still a danger zone. Here the 2nd Company of the 2nd RIMa ("les Chameaux" – "the camels") practices FIBUA (Fighting in Built-Up Areas).

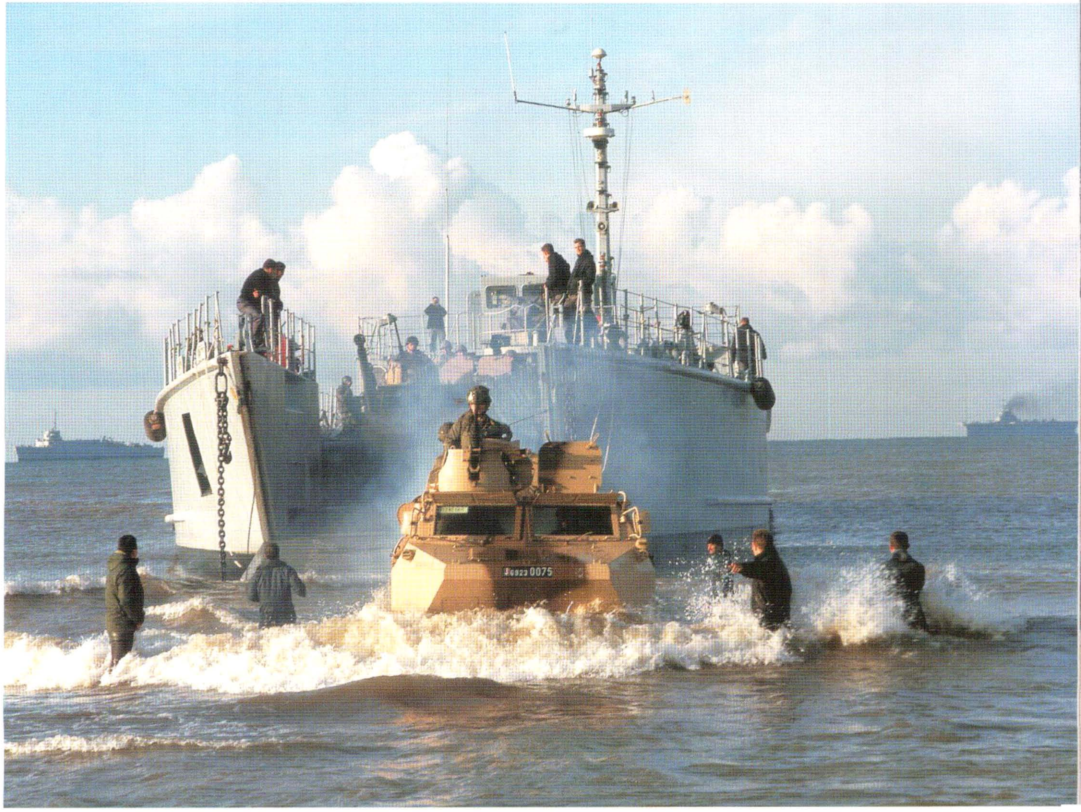


Marsouins of the 2nd Company of the 2nd RIMa are trained in FIBUA techniques. Note the external "ops" uniform of a flak jacket, Fritz type helmet, camouflage, and SPECTRA.

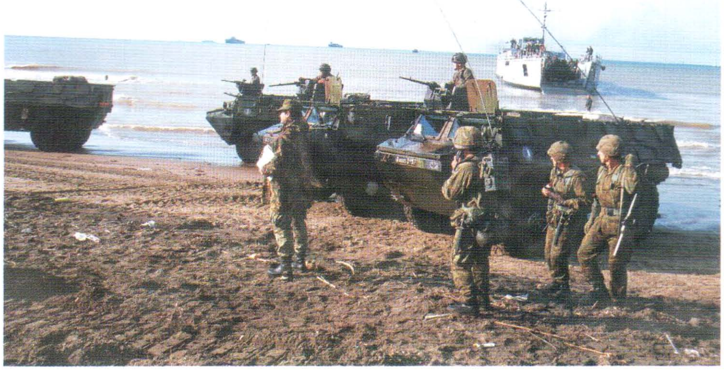
3ème Régiment d'Infanterie de Marine (3ème RIMa) – 3rd Marine Infantry Regiment

In 1970, the 3rd RIMa was the first of the regiments to be professionalized. It is also one of the most famous regiments in the land forces because it participated in all of the major operations of the land forces during the past 30 years. At Ati in Chad, the *marsouins* of the 3rd RIMa launched an assault against the Libyan-supported rebels while singing their traditional song. The "3" is cited in the order of the Army during the Gulf War and the Regiment served in Rwanda during Operation Turquoise. In Sarajevo a year later, the *marsouins* of 2nd Company recovered the Vrbanja bridge position after a bloody hand-to-hand fight. The Regiment ended the century in Chad and back in the Balkans where the entire world watched on the news as it helped maintain order at Mitrovica Bridge in Kosovo.

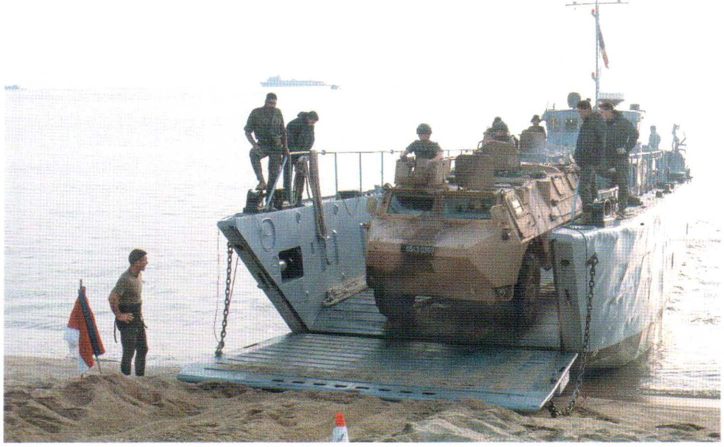
The organization is the same as that of the armored regiment, i.e., motorized on VABs, with the exception of a supplementary company that uses the VAB HOT, which is capable of destroying a tank at 4000 meters (4372 yards). The Regiment is equipped with 97 VABs, 16 VAB HOT vehicles, 16 MILAN launchers, 27 Eryx, six 120mm mortars, and six 81mm mortars.



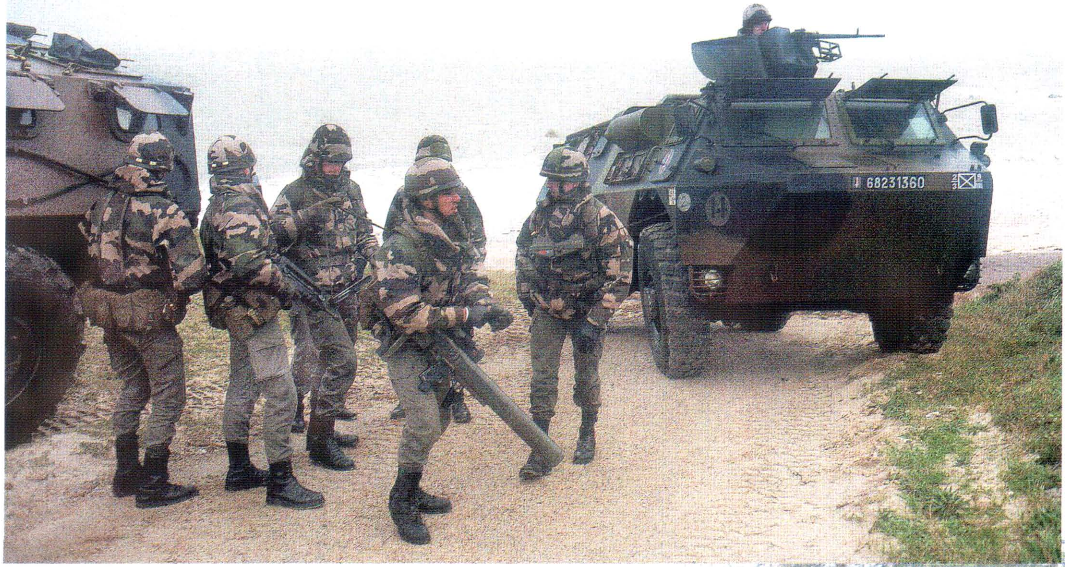
The 3rd RIMa is one of the most famous regiments in the French Army. It is currently a motorized unit of the 9th Marine Light Armored Brigade equipped with VAB vehicles. This VAB, which is perfectly suited for amphibious operations, is shown during Exercise "Ardente" in Italy. Note that it is painted for overseas service.



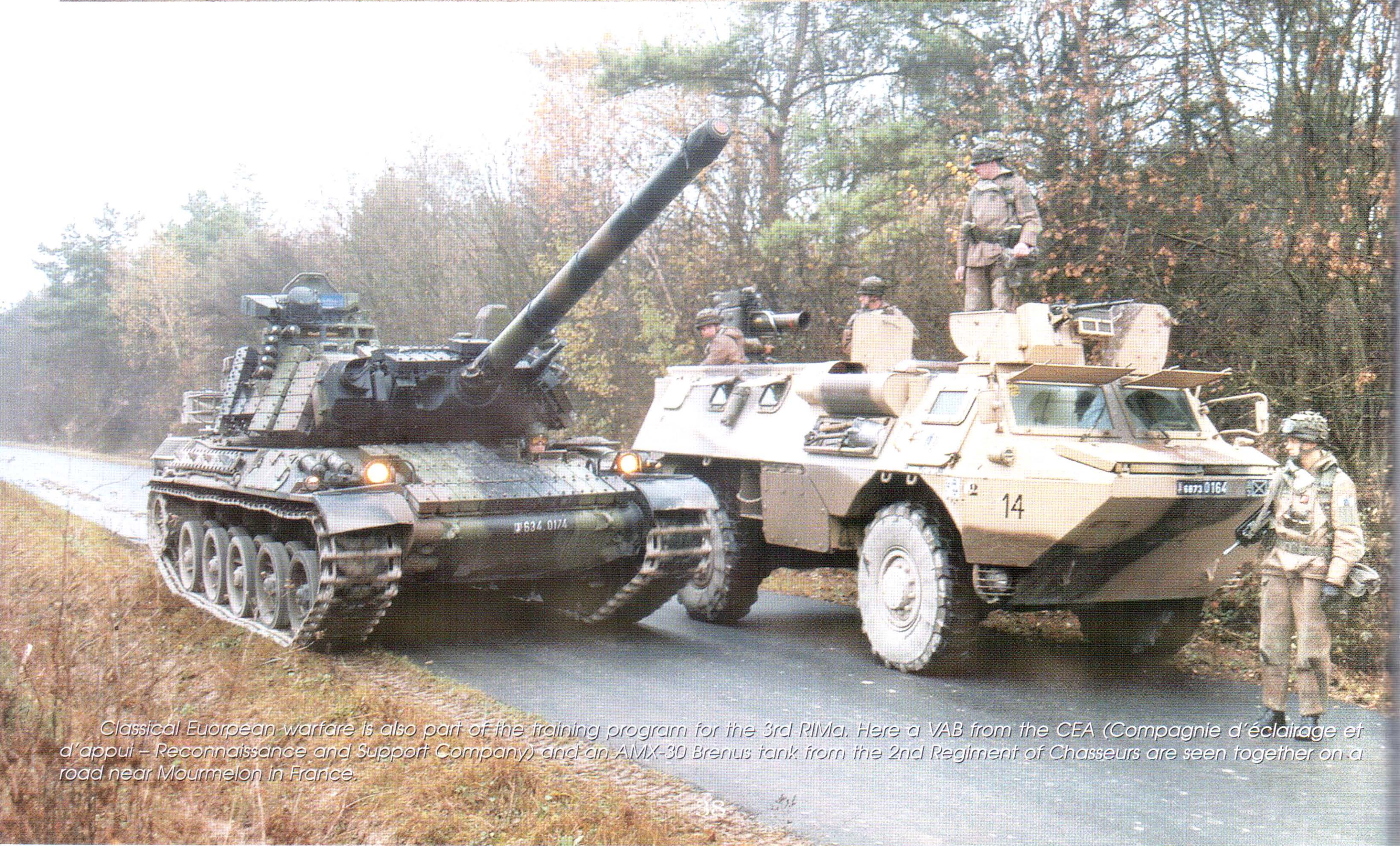
VABs of the 3rd RIMa are ready to roll into action after landing on the beach during Exercise "Ardente". Note the darker Central Europe paint scheme on these APCs.



A VAB belonging to the 3rd RIMa exits a landing craft during the amphibious exercise "Farfadet" that was held in southeastern France.



Like other units in the 9th Marine Light Armored Brigade, the 3rd RIMa practices amphibious operations at the regimental level. Here they put up with the typical local weather of Brittany as they secure a beachhead.



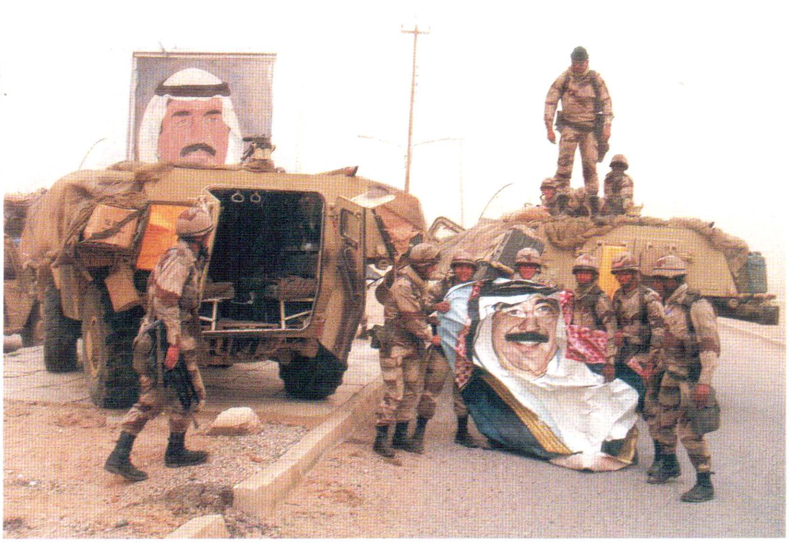
Classical Euorpean warfare is also part of the training program for the 3rd RIMa. Here a VAB from the CEA (Compagnie d'éclairage et d'appui – Reconnaissance and Support Company) and an AMX-30 Brenus tank from the 2nd Regiment of Chasseurs are seen together on a road near Mourmelon in France.

Marsouins of the 3rd RIMa remain alert during European warfare training. In the background you can see a MILAN antitank post mounted to the vehicle.

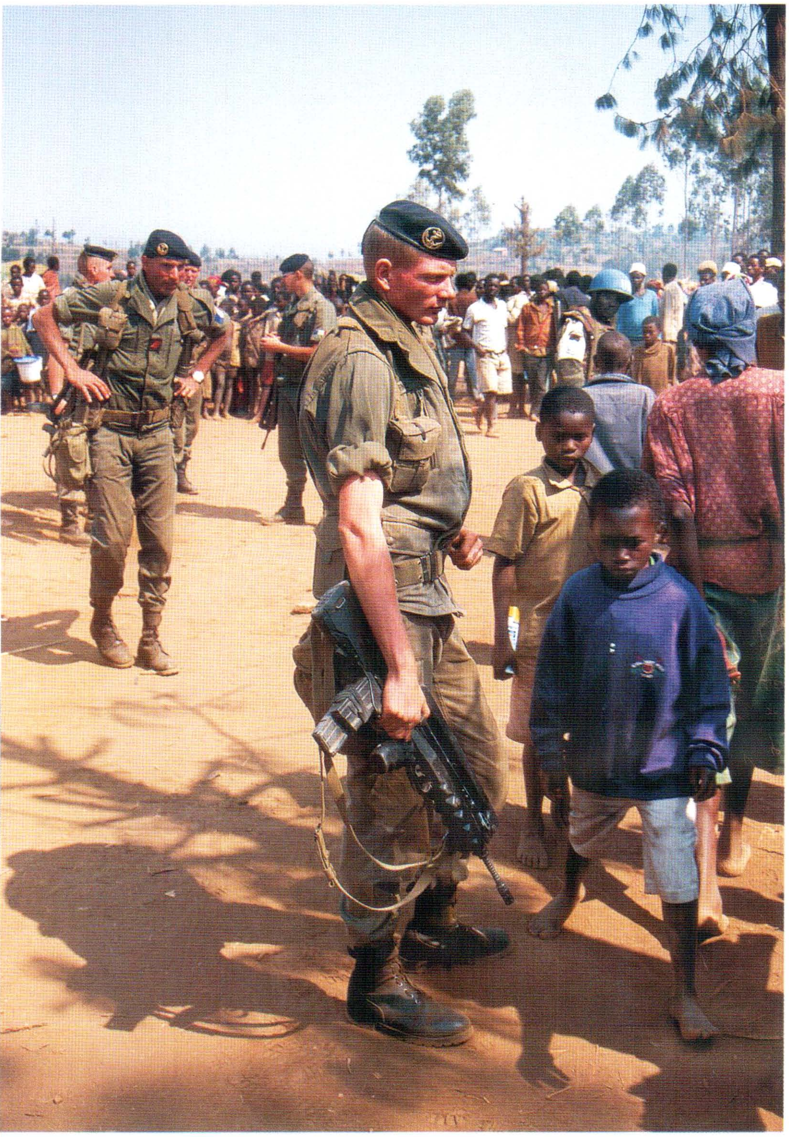
Elements of the 3rd RIMa train hard at the firing camp at Mourmelon. Note the MILAN post in the foreground. The CEA contains two MILAN platoons.

The Heavy Mortar Section of the CEA is equipped with six 120mm heavy mortars. Fitted with road wheels, these mortars can be towed by a truck. A good crew can put the weapon into action in just 90 seconds.

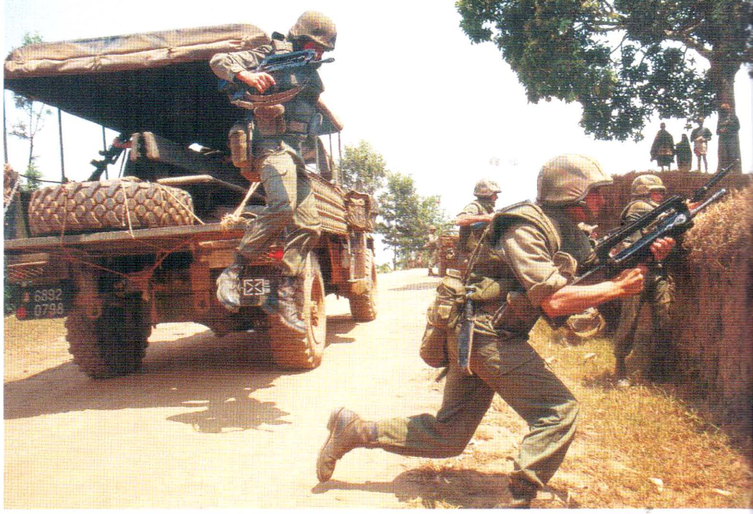
The SML (Section de mortier lourd – Heavy Mortar Section) is an important part of the CEA. They are seen here at the Mailly range in Champagne preparing for deployment to Bosnia.



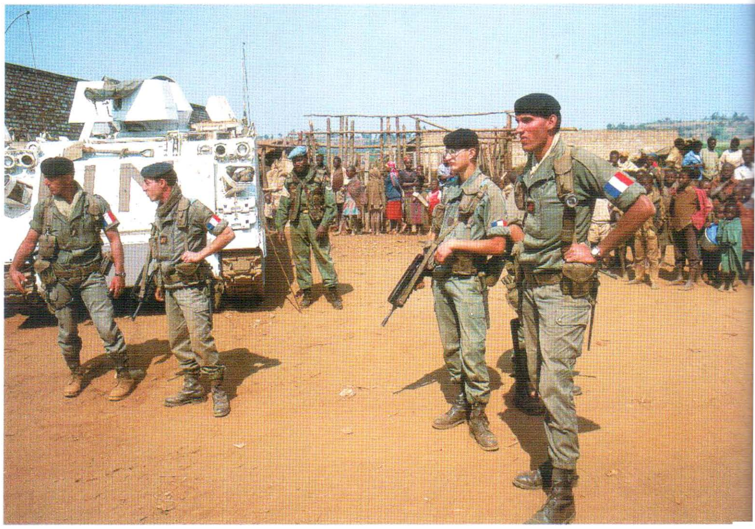
One of the greatest moments of the 3rd RIMa during its modern history was the capture of the city of Al Salman in Iraq during the Gulf War. Following a blitzkrieg, the city fell into the hands of the French Daguet Division in Febraury 1991. In this photograph, happy marsouins of the 3rd RIMa pose with a poster of Saddam Hussein.



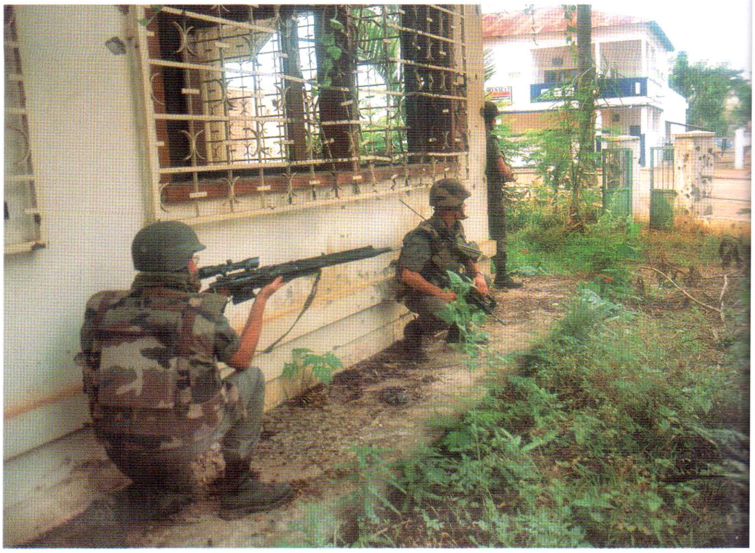
The 1st Company of the 3rd RIMa ("les Forbans" – "the pirates") was involved in Operation Turquoise in Rwanda. Here marsouins stand watch at a Hutu refugee camp.



Marines of the 1st Company, 3rd RIMa exit their VLRA cross-country truck during an intervention in Rwanda during Operation Turquoise in August of 1994.



UN soldiers from Ghana, who were equipped with M-113s, replaced these troops of the 1st Company of the 3rd RIMa. This photo was taken during Operation Turquoise in Rwanda.



In 1997, the Central African Army mutinied for the third time and threatened the government. The French Army became involved to protect the legally elected regime and launched an operation following the murder of two Marine NCOs. Here elements of the 3rd RIMa take control of the center town in Bangui, the capital of the RCA (Republic of Central Africa).

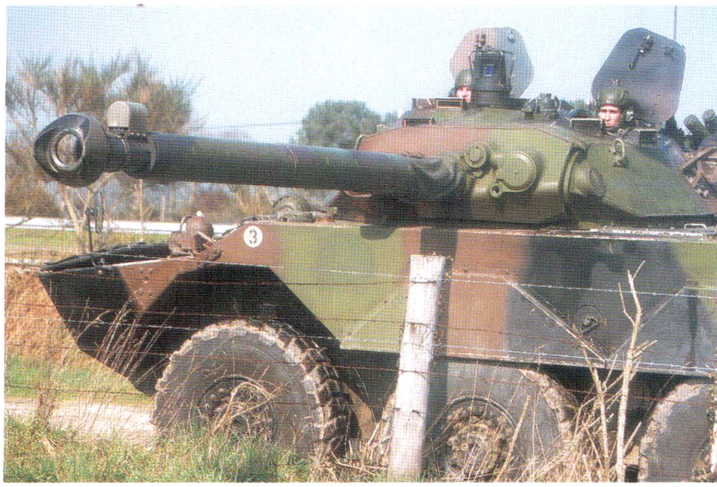
The French Marine in the foreground mans a position during the mutiny in Central Africa with an AA-52 general purpose machine gun.

During the French involvement in restoring order in Central Africa in 1997, a marsouin of the 3rd RIMa remains on the lookout for activity. This position was assaulted several times by certain members of the local population supported by the mutinous troops.

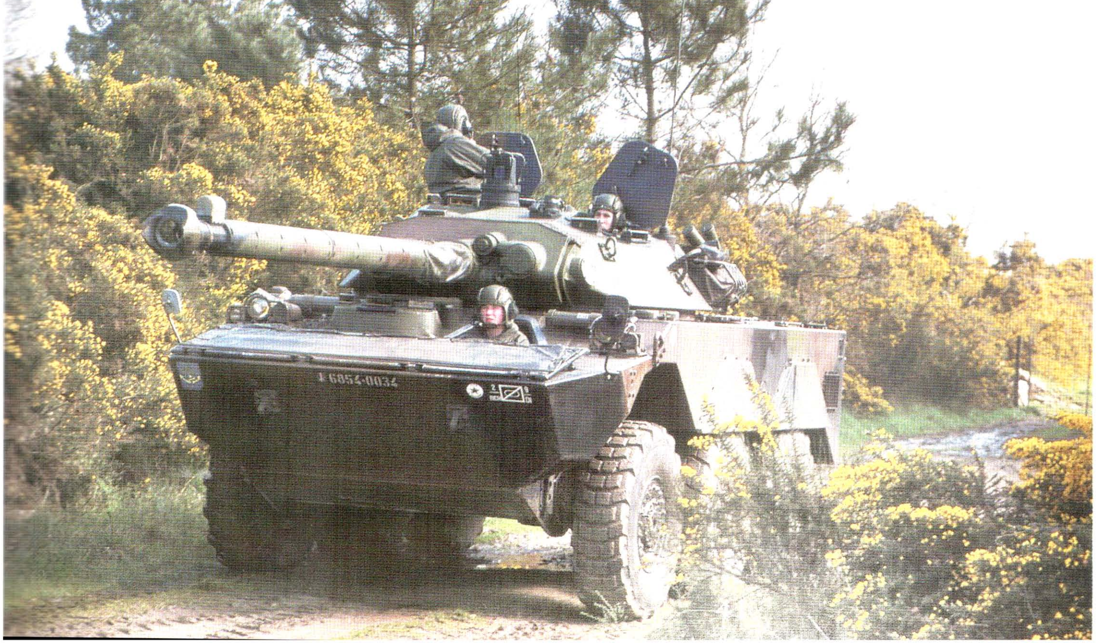
Régiment d'Infanterie de Char de Marine (RICM) – Marine Armored Infantry Regiment

This regiment is one of the most illustrious and its flag is the most decorated one in the French Army. Nineteen thousand *marsouins* were killed or wounded in its ranks in the past 80 years. The RICM was created at Rabat in Morocco in June 9, 1915 as the *Régiment d'Infanterie Coloniale du Maroc*. The Regiment led the way in the attack at Al Salman during the Gulf War. It was one of the first units deployed to Yugoslavia in 1992 and it took part in Operation Turquoise in Rwanda.

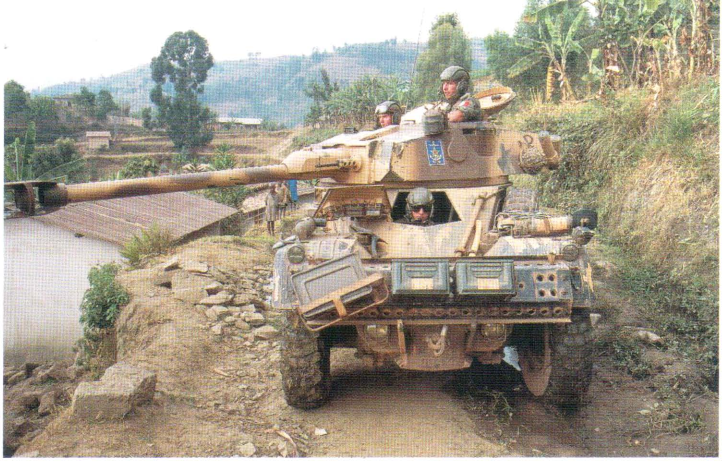
Today the RICM is a light armored regiment that is transported in AMX-10 RC armored cars. Their primary task is to be ready to fight in a primarily armored conflict after being deployed outside of the national boundaries. For this type of mission, the RICM can employ 47 AMX-10 RCs, 32 VABs and 32 VBLs. The RICM is made up of a command and logistic squadron, four combat squadrons, a base and instruction unit, and a professional regiment as a reserve unit.



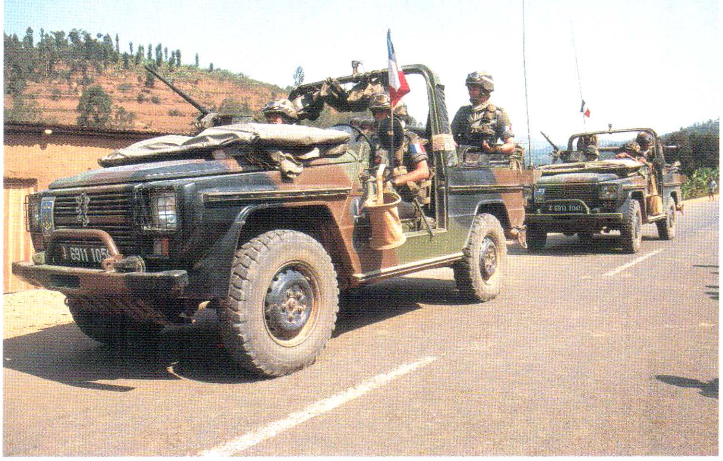
The RICM (Marine Armored Infantry Regiment) is the most decorated regiment in the French Army. Today it is a light armored regiment, which is, like the 1st RIMa, mounted on AMX-10 RC armored vehicles.



The versatile RICM, with its AMX-10 RCs, can be used in a classic role in Europe as well as in low intensity conflicts overseas.



During Operation Turquoise in Rwanda (1994), the RICM used AML-90 armored cars that were already in place in the Central African Republic. Note the RICM badge on the turret of this AML-90. Several times this armored car opened dissuasive fire against Tutsi forces.

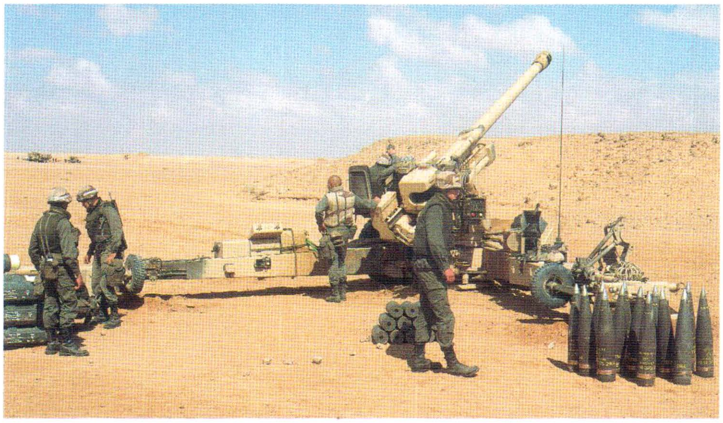


This photograph shows some reconnaissance and intervention troops that were especially prepared for Operation Turquoise in Rwanda. The Peugeot P-4 vehicles are manned by a crew of four. They are armed with the AA-52 machine gun, and the soldier in the background caries an 89mm rocket launcher.

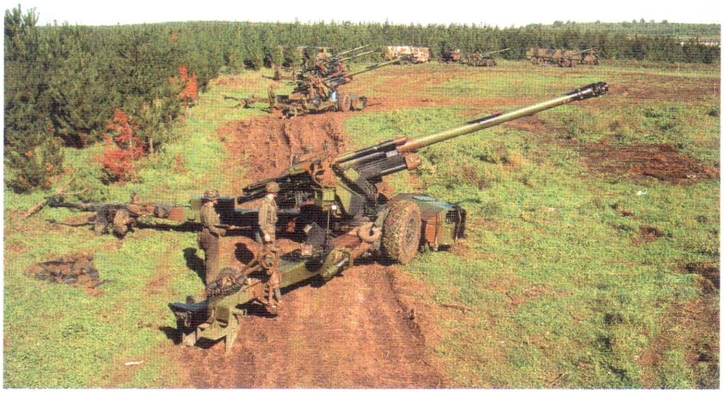
11ème Régiment d'Artillerie de Marine (11ème RAMa) – 11th Marine Artillery Regiment

The slogan of this regiment is "The Terror after the Lightning". The artillerymen, whose traditions date back to the era of the sailing ships, serve death from their 155mm TRF-1 guns, but they can also be used as foot soldiers in overseas actions. The 11th RAMa was in action in Chad in 1979 where *bigors* opened a withering fire with the barrels of their guns pointed horizontally at the Toyotas driven by the Chadian rebels who attacked the city of Abéché. During the Gulf War, the 11th RAMa, who had M109-equipped regiments of the US National Guard under its command, fired 1400 shells. Three years later, while in Rwanda during Operation Turquoise, the RAMa fired illumination grenades from its 120mm mortars to dissuade the Tutsi from invading the humanitarian zone that France had designated.

The Regiment has at its disposal 320 vehicles, 25 155mm TRF-1 guns, 16 120mm mortars, and 53 VABs that are used especially for observation, topographical reconnaissance, and locating targets.

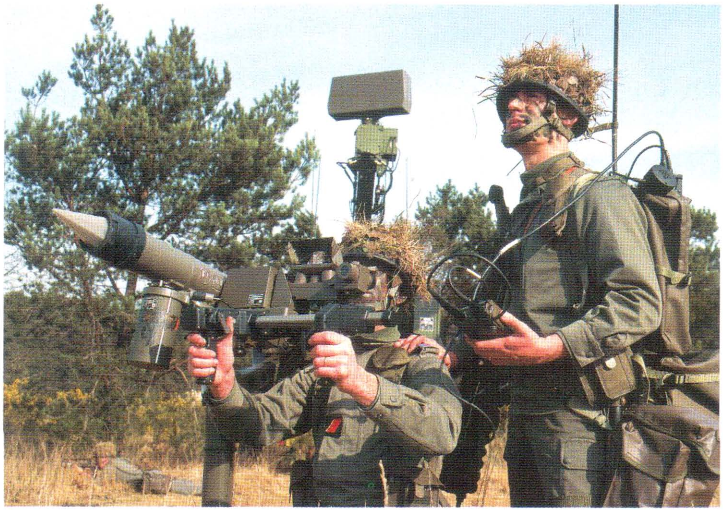


During the Gulf War, the 11th RAMa supported the advance of the Daguet Division inside Iraq. The 24 guns of the regiment were able to deliver seven tons of explosives in less than one minute. During this campaign, the members of the 11th RAMa received the "overseas" medal.

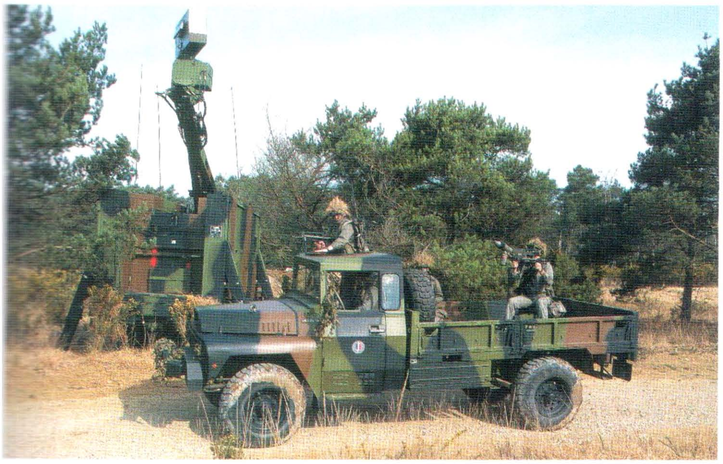


A battery of the 11th RAMa in action during Exercise "Ardente" in Italy. The guns are 155mm TRF-1s painted in Central European camouflage.

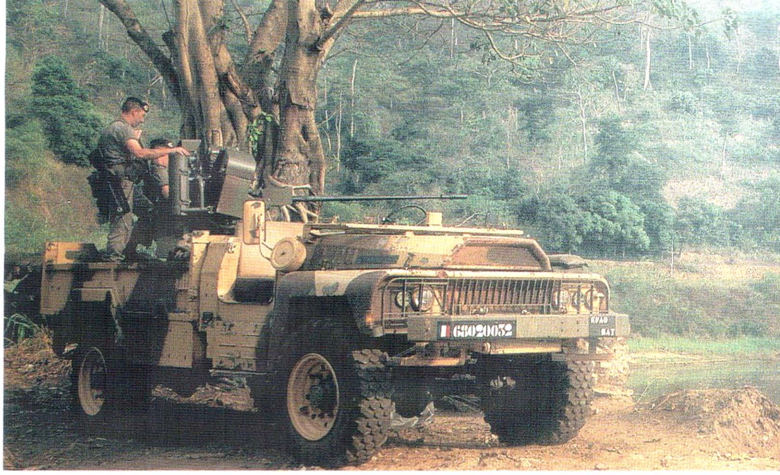
A young bigors provides close protection for a RATAC radar mounted on a VAB during Operation Daguet in Iraq.



The 11th RAMa has an anti-aircraft battery with MISTRAL missiles and SAMANTHA radar. The MISTRAL missile can be fired from the ground or from VLRA light tactical vehicles.

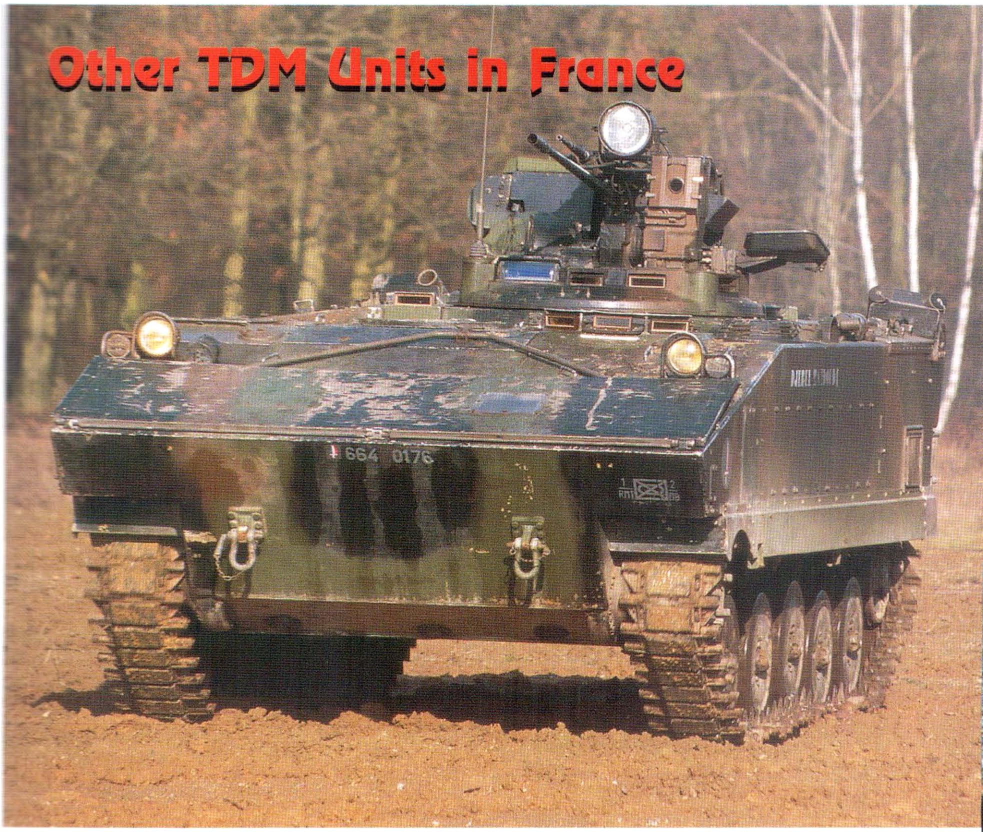


Using SAMANTHA radar, gunners of the 11th RAMa can detect aircraft at 20 km (12.4 miles) and engage them at 8-10 km (5-6.2 miles).



Like all of the TDM units, the 11th RAMa sent a unité de marche (marching unit) overseas. A VLRA with a 20mm gun mounted on it sits on a road next to the Ubangi River in Bangui in the Central African Republic during the mutiny of that nation's army. French intervention was called Operation Almandin.

Other TDM Units in France



The RMT (Marching Regiment of Chad) is a regiment of great tradition within the TDM. It is a mechanized regiment equipped with AMX-10 Ps armed with a 20mm TOUCAN turret and belongs to the 2nd BB (Brigade Blindée – Armored Brigade).

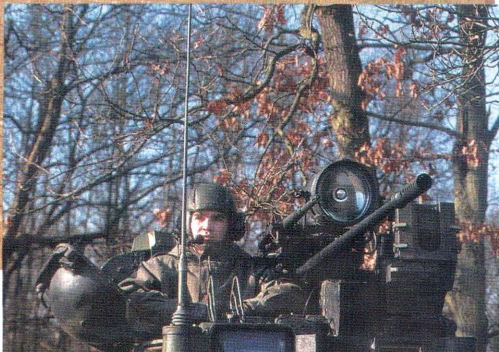
Besides the 9ème BLBMa, other famous units in metropolitan France under the TDM are:

Units Belonging to the *2ème Brigade Blindeé* (2nd Armored Brigade)

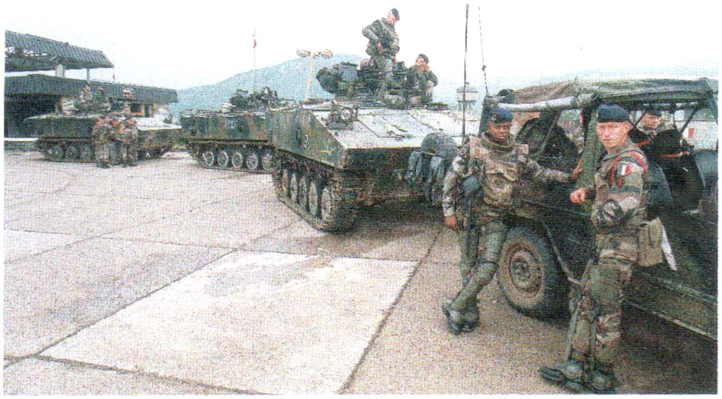
Régiment de Marche du Tchad (RMT) – Marching Regiment of Chad

In France, the RMT is called the "Regiment of the Oath" because they made a vow to General Leclerc at Koufra in Libya in 1941 not to put up their weapons until the French flag floated over the cathedral at Strassbourg. The RMT was the first Free French unit, and they made good on the pact made at Koufra when they liberated Strassbourg in 1944. The RMT also distinguished itself in Indochina and Morocco. In 1995, the Regiment still consisted of conscripts. During the fighting near Sarajevo, a post manned by conscripts became completely isolated during a Bosnian offensive. Amidst the explosions of combat, the young troops held their position for more than a week under conditions reminiscent of the trench warfare of 1916.

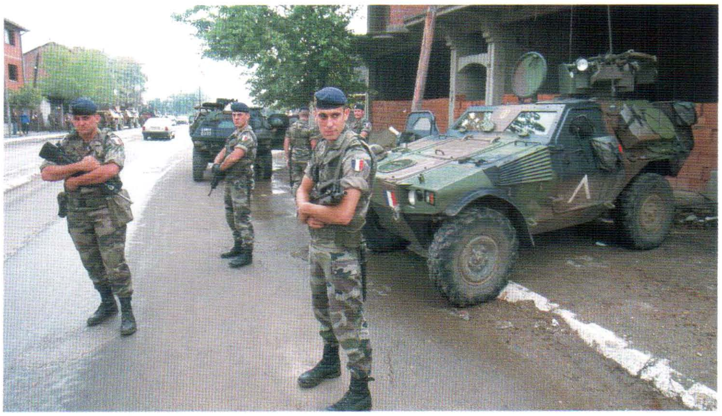
Today the RMT is one of the infantry regiments of the 2nd Armored Brigade. Equipped with AMX-10 Ps, it participated in operations in Yugoslavia and Kosovo. The vehicles used by the RMT are 69 AMX-10 Ps, 16 VAB HOTs, 16 MILAN, and 24 Eryx.



The RMT keeps alive the tradition of the 2nd Armored Division of Free France, who liberated Paris in 1944. The insignia of the Free French forces is retained in their regimental insignia, which is visible on this AMX-10 P.



Several times the RMT was deployed to the Balkans, particularly to Mitrovica in Kosovo. Photographed in July of 2000, a platoon of AMX-10 Ps is on full alert in the Serbian part of the city.

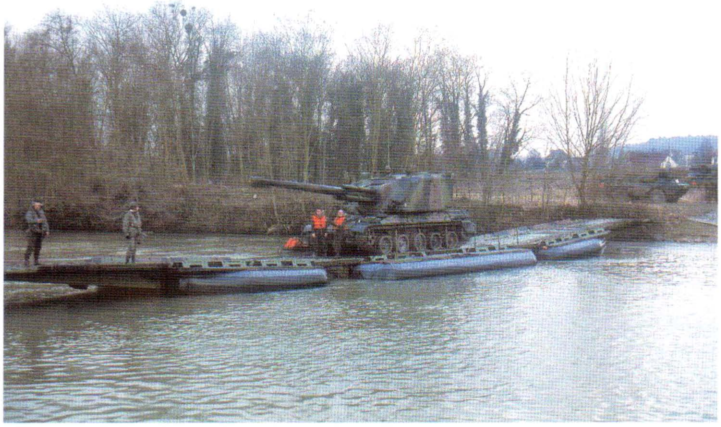


This platoon of VBLs from the RMT was deployed to a street in Mitrovica in Kosovo to protect an Orthodox church.

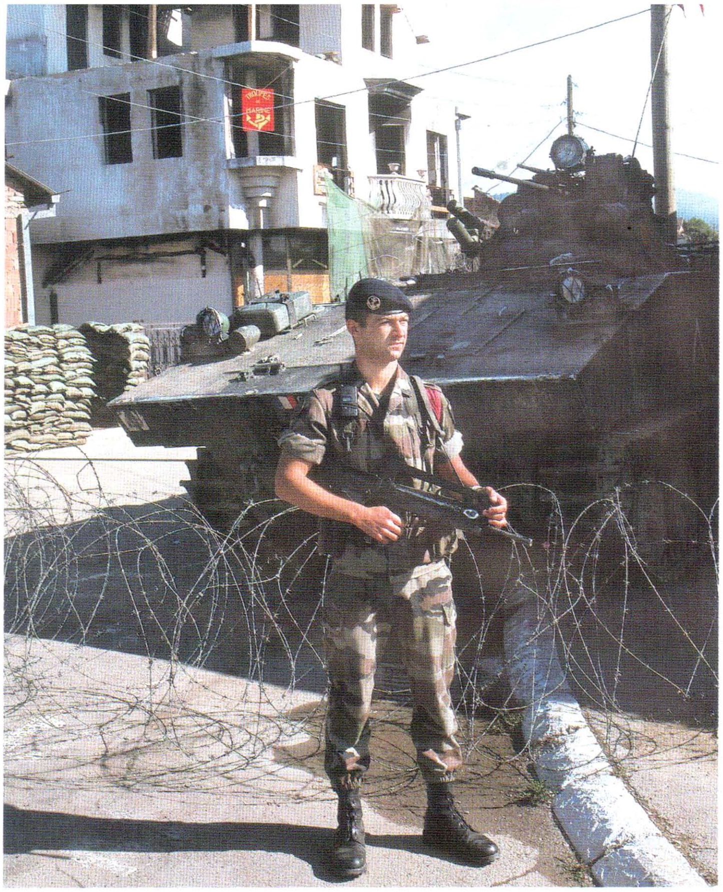
1er Régiment d'Artillerie de Marine (1er RAMa) – 1st Marine Artillery Regiment

Descendents of the gunners in the *Compagnies franches de la marine* created by Cardinal Richelieu in 1622, the 1st RAMa participated in every war waged by France over three centuries. Under Napoleon at Lutzen and Bautze (1814), gunners left their ship batteries to man the batteries on the ground. The 1st RAMa won numerous battle honors during World War One and it was the first Free French regiment of artillery. Today, the regiment is the artillery regiment of the 2nd Armored Brigade. Employing extremely modern and efficient materiel, it has 32 155mm AU-F1 self-propelled guns dispersed among four combat batteries. Thanks to the ATLAS system, the firing is computerized.

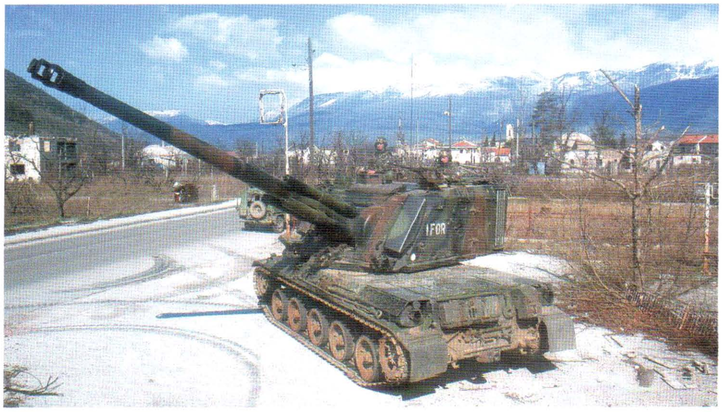
The Regiment participated in all of the operations of the Salamander Division in Bosnia in 1996 and contributed a battery when NATO forces entered in Kosovo.



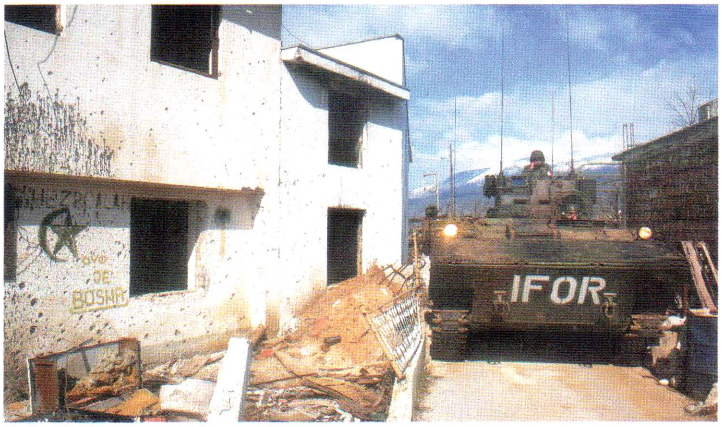
The 1st RAMa is the artillery regiment for the 2nd Armored Brigade. Here an AUF-1 self-propelled 155mm gun is used in river crossing practice over the Aisne River in northern France. Each battery in the 1st RAMa has eight guns.



A sentry from the RMT stands watch at a checkpoint at Bridge West, which separates the Serbian and Albanian parts of the city of Mitrovica. Note the AMX-10 PC in the background.



In the spring of 1996, a battery of AUF-1s from the 1st RAMa was sent to Mostar in Bosnia to support Multinational Division South "Salamander", which was under French command.

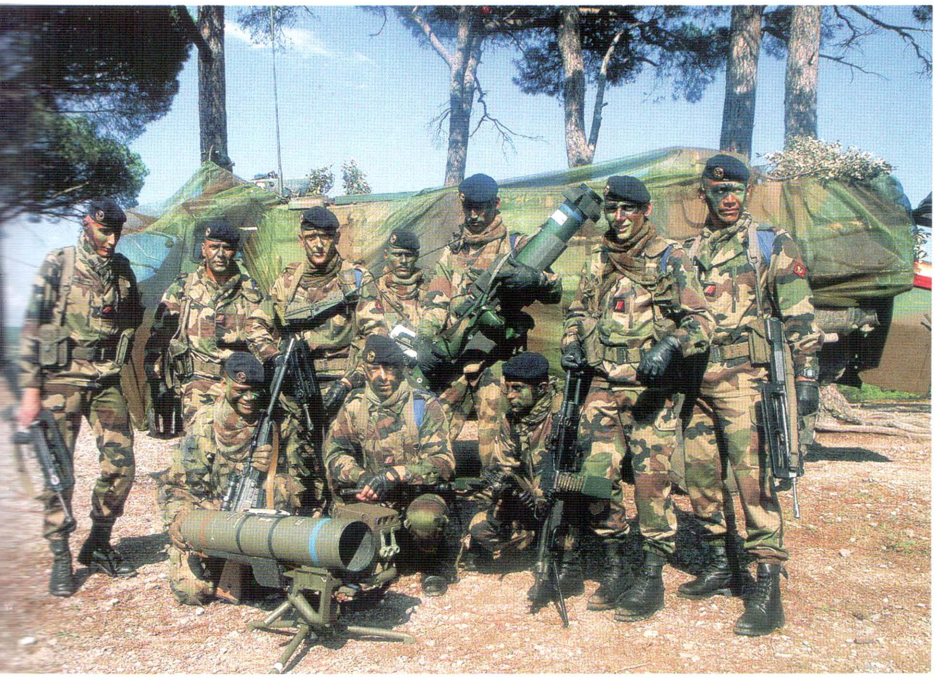


An AMX-10 VOA (Véhicule d'observation d'artillerie – Artillery Observation Vehicle) passes a ruined building in a destroyed village north of Mostar. Note the Islamic graffiti on the wall.

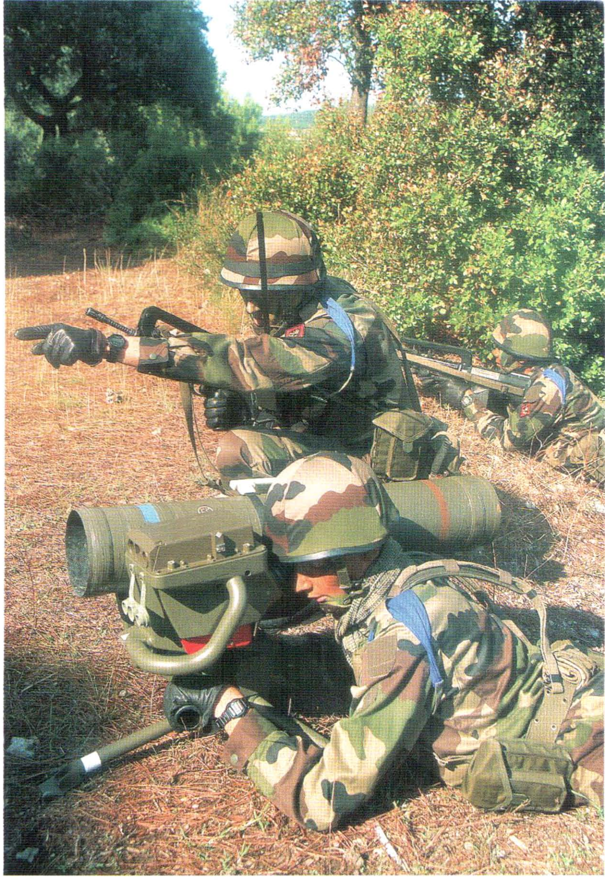
Units Belonging to the *6ème Brigade Légère Blindée* (6th Light Armored Brigade)

21ème *Régiment d'Infanterie de Marine* (21ème RIMa) – 21st Marine Infantry Regiment

The 21st RIMa is a first-rate regiment of the TDM. Since 1 July 1998, the 21st RIMa has been both an armored infantry regiment mounted on VABs and a center of instruction for staff called to serve overseas. Having been professionalized for 21 years, the Regiment served in Chad in 1990, participated in the Gulf War, served during the worst period of the siege of Sarajevo, was present in RCA in 1997, and was with NATO troops when they deployed to Kosovo. The main forces consist of four combat companies armed with 16 MILAN launchers, 24 Eryx, 92 VABs, six 120mm mortars, six 81mm mortars, and four 20mm VABs.



A groupe (troop) of marsouins from the 21st RIMa pose in front of a VAB armored personnel carrier. Some of the weapons they display are a Minimi LMG, FAMAS assault rifle, APILAS-112 disposable rocket launcher, FRF-2 sniper rifle, and Eryx antitank missile.



An Eryx antitank missile launcher is put to work. This short-range (800 meters (874 yards)) weapon can destroy any modern tank thanks to its powerful warhead. Each French squad has two launchers (six in a company). Canada, Malaysia, Singapore, and Norway have all adopted this weapon.

Marines of the 21st RIMa go through some training. Like the 2nd and 3rd RIMa, the 21st RIMa is a motorized regiment mounted on VAB APCs. The Regiment is based at Frejus in the south of France, a good departure base for overseas operations.

As part of the 6th BLB, the 21st RIMa was involved in many overseas exercises. One such activity was Exercise "Bright Star 97" in Egypt.

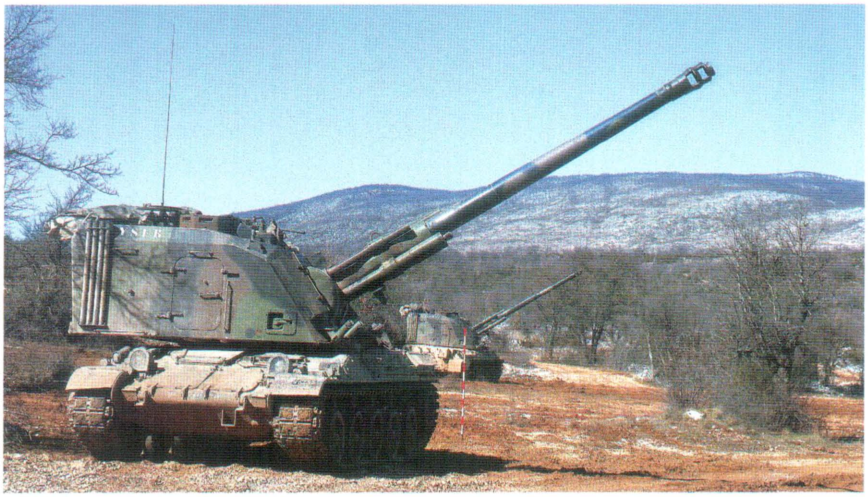
Every two years a Bright Star exercise is held near Alexandria in Egypt involving troops from the US, Italy, Great Britain, Egypt, and France.

Elements of the 2nd Company of the 21st RIMa take up a position in the desert sand of Egypt during "Bright Star 97".

3ème Régiment d'Artillerie de Marine (3ème RAMa) – 3rd Marine Artillery Regiment

Created by Napoleon's decree in 1803, the 3rd RAMa has names of major battles inscribed on its flag. This Gaullist regiment supplied the first and only 75mm gun during the Battle of Koufra in 1941 and participated in the liberation with the first-rate 2nd DB (*Division Blindeé* – Armored Division). In modern times, the 3rd RAMa is mainly an artillery instruction regiment. With the reorganization of the French Army, the 3rd RAMa became the artillery regiment for the 6th Light Armored Brigade.

Besides effectively sharing information, the Regiment is capable of delivering constant, effective and dense artillery fire anywhere between the front lines and 30km (19 miles) to destroy any enemy. Like every artillery regiment in France, the *bigors* of the 3rd RAMa can field AUF-1 self-propelled howitzers and 120mm mortars. The latter weapons are mainly used overseas. The unit has been re-supplied with 33 AUF-1 155mm guns, 16 120mm mortars, 10 20mm AA cannon, and 61 VABs.



The 3rd RAMa in action. This photo of an AUF-1 was taken at Canjuers, the large firing range in the south of France where full-scale live firing exercises can be conducted. The Regiment is an artillery training regiment belonging to the Artillery School, but it can also be deployed as an artillery regiment of the 6th BLB.

The GCP (Groupe Commando Parachutiste – Airborne Commando Group) of the 3rd RPIMa is shown participating in a free-fall operation during Exercise "EOLOS 2000". The GCP are the pathfinders of the Regiment and are normally grouped with the other GCP of the Regiment for intervention. During this large exercise of EUROFOR, which involves the armed forces of France, Spain, Italy, and Portugal, GCPs of all nations jump in order to prepare for an amphibious landing.

Units Belonging to the *11ème Brigade Parachutiste* (11th Paratrooper Brigade)

3ème Régiment Parachutiste d'Infanterie de Marine (3ème RPIMa) – 3rd Marine Infantry Paratroop Regiment

The 3rd RPIMa is a young but prestigious regiment. A professional unit, it is just as ready as the 8th RPIMa to go into action in less than 48 hours. Created in 1948, the 3rd RPIMa became famous in Indochina, notably in 1950 at That-ké and at Na-san in 1952. Under the orders of Colonel Bigeard, it served gloriously in Algeria and participated in operations in the Suez (1956) and at Bizerte in Tunisia (1961). Since then it has served in Lebanon (1978), Chad, RCA, Rwanda, Zaire, Iraq, and, of course, the Balkans. During the deployment to Kosovo, the 3rd RPIMa took part in the largest French helicopter operation since the war in Algeria (see Special Ops *Kosovo*).

Along with being able to handle missions that are assigned to motorized infantry regiments, the 3rd RPIMa is organized to be deployed by parachute and to be heliborne or airlifted. To accomplish their tasks, the Regiment can field 75 VABs, 21 Lohr, six 120mm mortars, six 81mm mortars, 24 Eryx, and 16 MILANs.

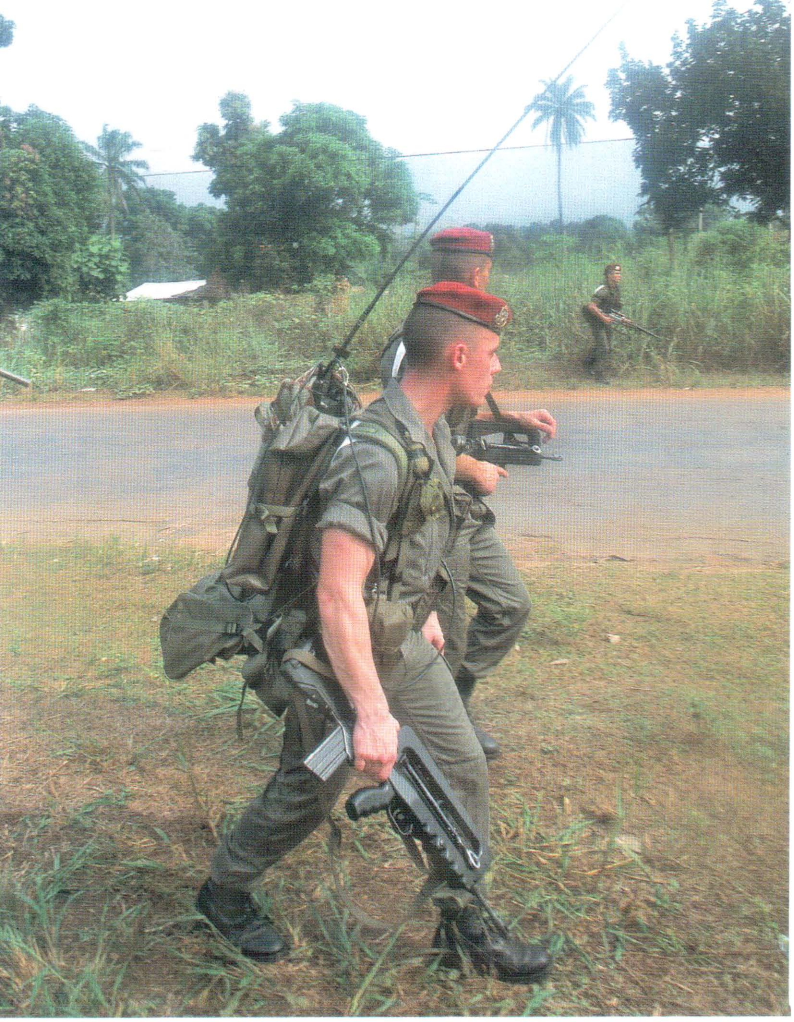
French Marine paras of the 3rd RIPMa gather before the camera during "EOLOS 2000" in Spain. The red berets with the winged dagues and the gold Marine anchor are symbolic of the paratroops.

TDM paratroops set up a defensive line during "EOLOS 2000". The .50-caliber machine gun, like the one shown here, is a classic weapon employed by the French infantry.

The presence of this MILAN missile launcher indicates that soldiers of the CEA (Recce and Support Company), the weapons company of the Regiment, participated in Exercise "EOLOS 2000".

Paratroops from the 3rd RPIMa wait for radioed instruction prior to going into action during "EOLOS 2000".

A patrol of marsouins wearing "boonie" hats and face camouflage advance stealthily during the exercise. The 3rd RPIMa is a cross-trained regiment that can be deployed by parachute, aircraft, helicopter, or simply by VABs.



The 8th RPIMa was involved in a great number of overseas actions. Here paratroopers from 2nd Company patrol in a suburb of Bangui (Republic of Central Africa) close to the rebel HQ.

Units Directly under the *Commandement des Opérations Speciales* (COS) – Special Operations Command

1er Régiment Parachutiste d'Infanterie de Marine (1er RPIMa) – 1st Marine Infantry Paratroop Regiment

A great deal of the information about this regiment is classified because it is tasked with missions similar to those carried out by the 3rd and 4th French SAS during World War Two. The 1st RPIMa is the descendent of these renowned units. Today, the 1st RPIMa is directly subordinate to the COS (Special Operations Command). As such, it has been involved in all of the major operations led by the land forces over the last ten years. These missions include operational assistance to France's African allies, information gathering and special action. The Regiment's paratroops can be infiltrated by HALO and HAHO, by submarine, etc. The unit was deployed in the Gulf War, where it helped to seize the fort at Al Salman in Iraq, in Yugoslavia, where several terrorists were killed, and in Rwanda.

The 1st RPIMa includes a staff, three RAPAS (Airborne Search Special Action) companies, a command and logistics company, an instruction company, and a communications company.

The TDM in continental France includes a number of non-combat units such as musicians and camp and supply regiments. They keep the colors of some famous disbanded units flying.

8ème Régiment Parachutiste d'Infanterie de Marine (8ème RPIMa) – 8th Marine Infantry Paratroop Regiment

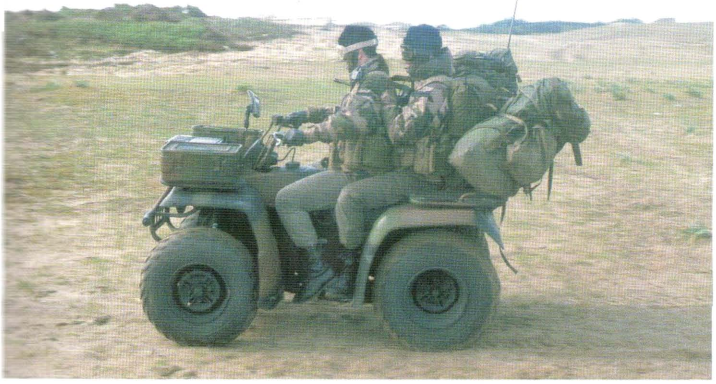
With the 3rd RPIMa, the 8th RPIMa is the other paratroop regiment designed to operate in times of urgency. Its main mission is to check the movement of an enemy into a key zone or the seizure of a bridgehead. Since its creation in 1951, the Regiment has engaged in the conflict in Indochina, where it distinguished itself at Dien Bien Phu before being virtually annihilated. After the war in Algeria, it participated in nearly every major French intervention overseas from Chad (1969) to Operation Trident in Macedonia in 1999.

The Regiment's main resources are 78 VABs, (four Eryx [four 20mm artillery and 8 MILAN]), six 120mm mortars, six 81mm mortars, 24 Eryx, and 16 Lohr. Its organization is similar to the other infantry regiments, and it has four combat companies and a reconnaissance and fire support company added to the service units.

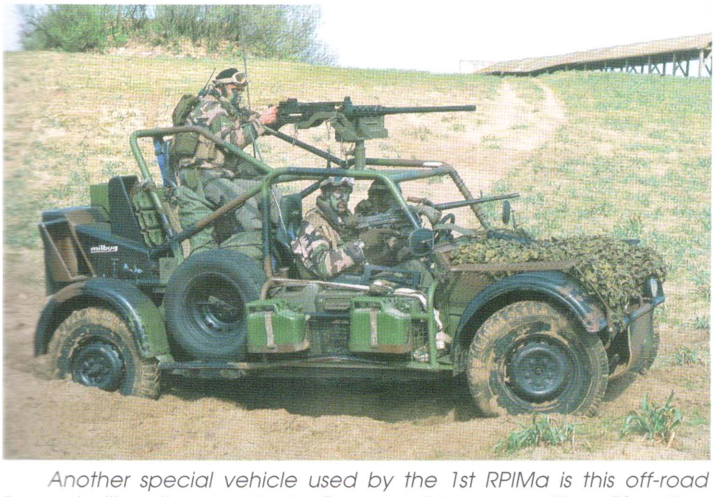
Advancing and fighting in a jungle environment is particularly difficult. The practice of rotating a company allows the French paras to undergo a jungle-training course in commando warfare in Gabon. These soldiers of 8th RPIMa are training in the African rain forest where people and equipment are wet 24 hours a day.

French Special Forces of the 1st RPIMa practice fast-rope techniques and rappelling from a Puma helicopter belonging to the COS helicopter squadron.

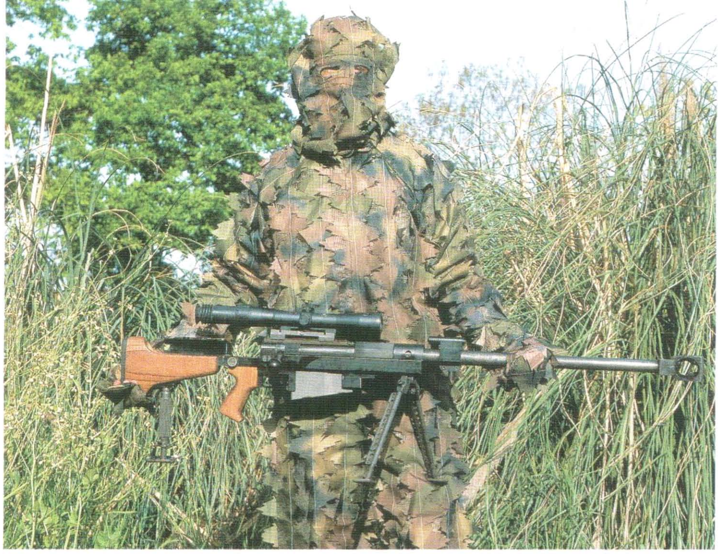
The elite soldiers of the 1st RPIMa can conduct anti-terrorism operations as well as classic Special Forces missions like strategic reconnaissance or sabotage.



The 1st RPIMa employs some special vehicles to accomplish its missions. One example is this QUAD two-man vehicle.

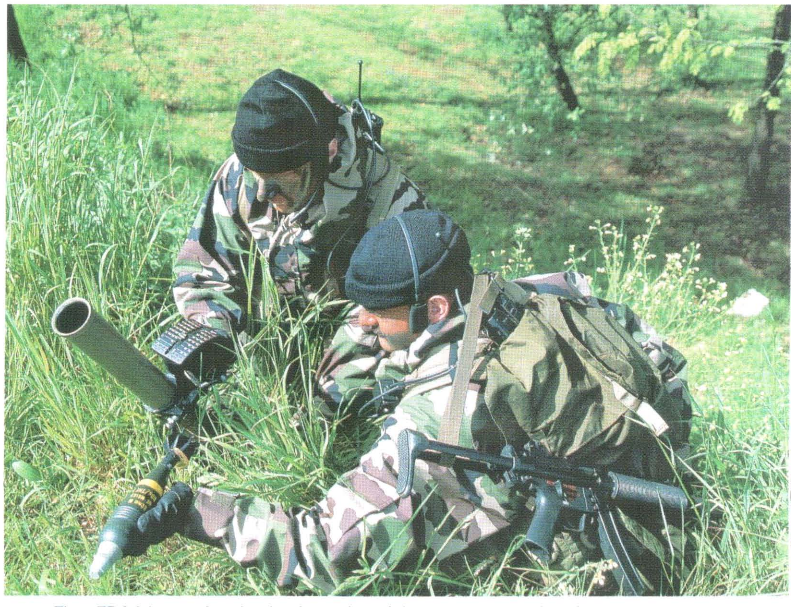


Another special vehicle used by the 1st RPIMa is this off-road buggy built on the chassis of a Peugeot. It is armed with a .50-caliber MG and an AA-52 LMG.



Many of the elite soldiers of 1st RPIMa are specialists in the art of sniping. A number of weapons were tested by the Regiment, but they settled on this French-made 12.7mm model.

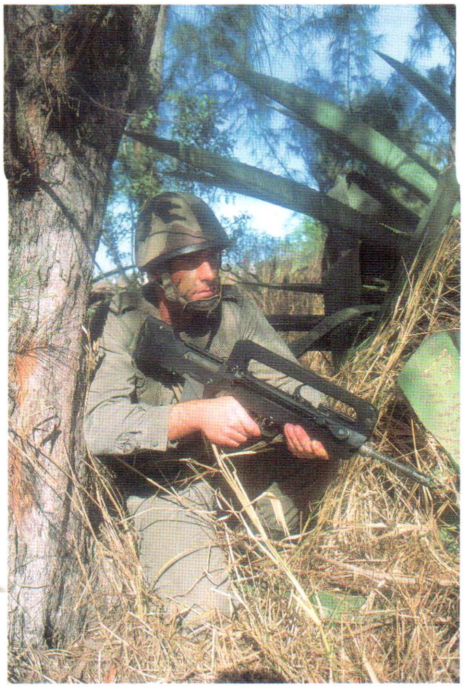
The snipers of the 1st RPIMa wear a special camouflage outfit that enables them to become virtually invisible when environmental conditions are right.



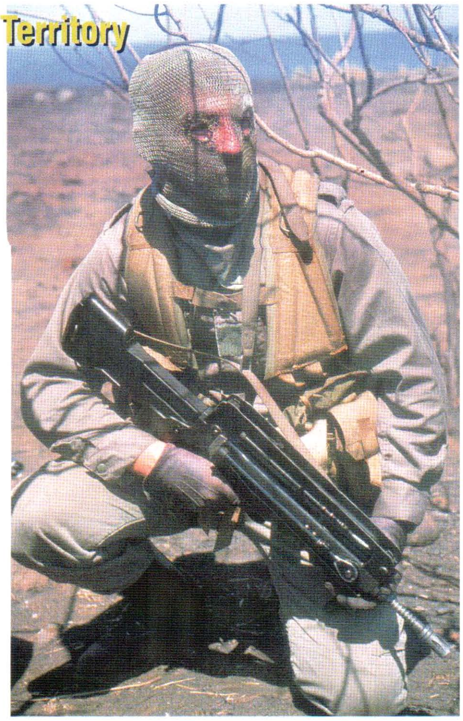
The TDM has also tested and put to use many foreign weapons. Two examples are seen here, the H & K MP-5 submachine gun and the South African-made 60mm commando mortar.

2ème Régiment Parachutiste d'Infanterie de Marine (2ème RPIMa) – 2nd Marine Infantry Paratroop Regiment

This regiment, the descendent of the French SAS, is based on the island of Réunion in the Indian Ocean. Its mission is to protect the vital interests of the countries in the Indian Ocean, most notably the strategic Eparases Islands situated in the canal of Mozambique. The Regiment consists of two combat companies (one being a paratroop company), a command and logistics company, and a staff unit. The Regiment was involved in Operation Turquoise in Rwanda and in the archipelago of the Comoro Islands.



A soldier from the 2nd Company "Bourbon" of the 2nd RIPMa takes cover after being airlifted to Réunion Island.

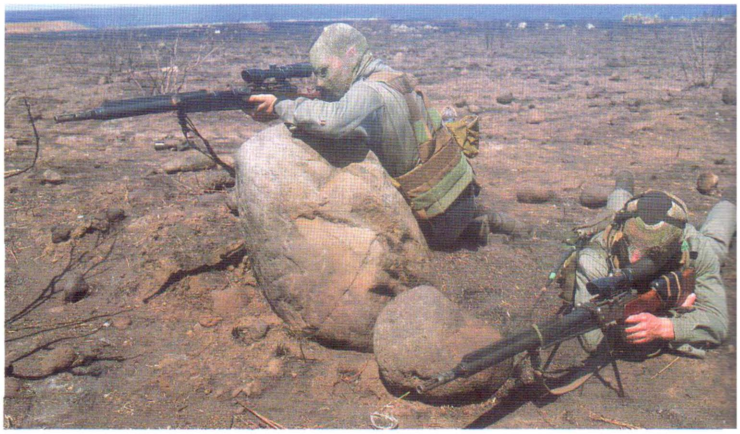


The members of the GCP of the 2nd RIPMa have a distinctive appearance. Note how the special mask renders the soldier unrecognizable.

Parachute jump with EPI canopies on Réunion Island. Airborne operations can be necessary to insert troops onto small islands that are part of the French sovereign territories in the Indian Ocean.

Another method of deploying troops to a lonely island combat zone is the airlift operation. Here an AA-52 machine gun has been set up to protect the landing of a second wave of troops.

Marines of the 2nd RIPMa hustle to clear the exposed landing zone where the Transall transport aircraft has landed during an airlift exercise.



Like all French paratroop units, the 2nd RIPMa has its own GCP (Groupe Commando Parachutiste) team that performs the pathfinder role. The GCP of the 2nd RIPMa was involved in a nighttime sea landing during Operation Azalée, which took place in early 1990 and successfully reduced the power of the mercenaries in the Comoro Islands.

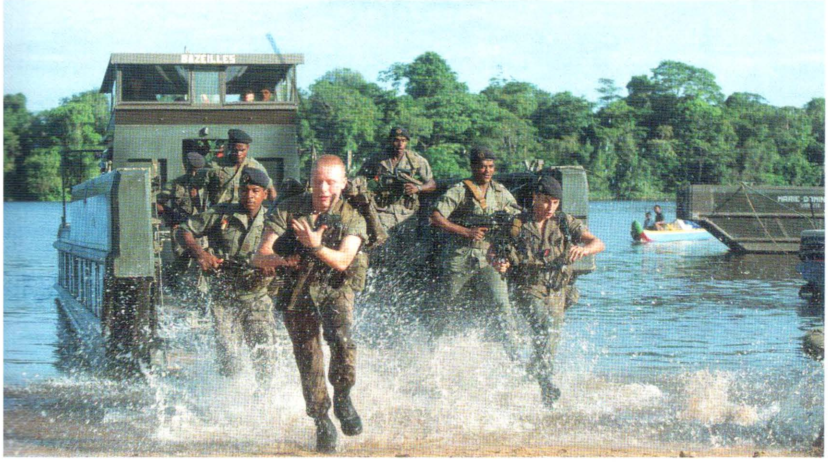
9ème Régiment d'Infanterie de Marine (9ème RIMa) Guyana – 9th Marine Infantry Regiment

The 9th RIMa was created in 1890 in Tonkin in Indochina. Today, the 9th is an operational infantry and support regiment that typically performs its mission in South American environments. Totally adapted to jungle living thanks to its recruitment of locals based in the Creole region and the Bushi-Nengue and Amerindien countries, the Regiment insures a French presence on the border of Surinam. The main mission of the 9th RIMa is to assert French sovereign power in Guyana, especially on the Maroni River. Another mission is to combat illegal immigration.

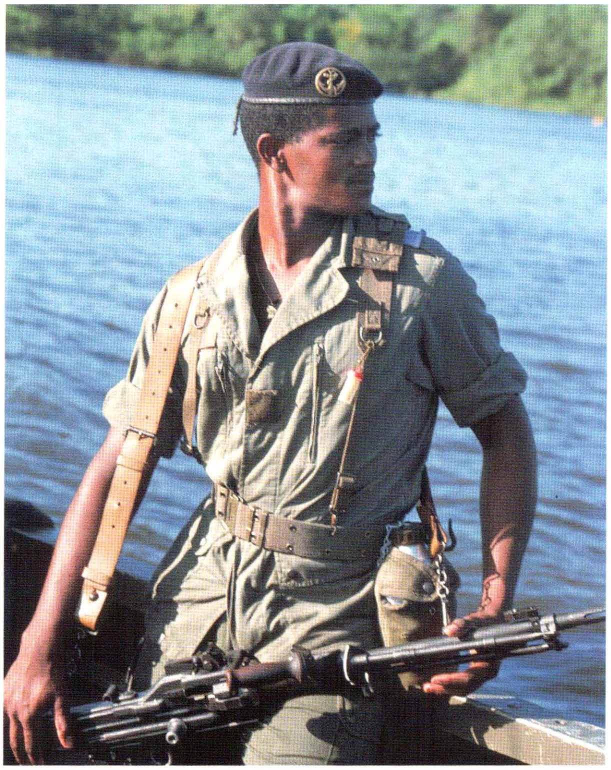
Besides its administrative units, the 9th RIMa contains two combat companies, one of which comes from continental France every six months. This system allows metropolitan French troops to be trained in jungle techniques.

Throughout the world, infantrymen are transported by APCs or trucks, but in Guyana there is only one main road, and the only way to patrol that region is by pirogue, which is a large canoe. The 9th RIMa has 20 of them that are operated by locals who believe in the Forest Spirit. The Regiment is also in charge of controlling illegal immigrants coming from Surinam who try to clandestinely cross the Maroni river that borders Guyana.

A French marsouin in traditional uniform performs guard duty at the HQ of the French forces in Guyana at Cayene, the capital of this overseas department.



The heavy material of the 9th RIMa consists of three large barges used for river operations. Note the traditional Bazeille name painted on the bridge of the vessel.



A large number of locals – who are, of course, French citizens – serve in the 9th RIMa. Note the AA-52 machine gun and the Troupe de Marine blue beret and golden anchor.

During the civil war in Surinam, the 9th RIMa established a series of military posts along the border. Here a .50-caliber machine gun crew watches the other side of the river where there is a base for the Surinam rebels.

In Guyana, the Puma helicopter is the only means of re-supplying a small garrison or deep jungle patrol.

A patrol made up of members of the rotating company attached to the 9th RIMa makes its way through the jungle in Guyana. Every six months a company of troops arrives from France to reinforce the Regiment. This rotation is a good opportunity for soldiers stationed in metropolitan France to acquire jungle training.

33ème Régiment d'Infanterie de Marine (33ème RIMa) Martinique Island – 33rd Marine Infantry Regiment

Created in 1914, the 33rd RIMa participated in the major battles of World War One; "Champagne *1915*", "Verdun *1917*" and "Aisne *1917*" are registered on its colors. The traditional regiment of the Antilles, the 33rd has the task of insuring the protection of French interests in the Caribbean Island region. It also participates in humanitarian missions and was notably engaged in Nicaragua and Guatemala to assist the local population that was affected by cyclone "Mitch".

The 33rd RIMa possesses some of the most sophisticated weapons, such as the MILAN antitank weapon and the MISTRAL antiaircraft missile shown here. The camouflage uniforms worn by these men would be difficult to see in the tropical environment.

GUYANE
MARTINIQUE
GUADELOUPE
33

In the 17th and 18th centuries, the Antilles (West Indies) was a haven for pirates and buccaneers. Some souvenirs of that era remain, such as this cannon, alongside which stands the honor guard of the 33rd RIMa, the French regiment posted in Martinique.

41ème Bataillon d'Infanterie de Marine (41ème BIMa) Guadeloupe Island – 41st Marine Infantry Battalion

The mission of the 41st BIMa is to insure the defense of the archipelago of Guadeloupe. It contains a motorized combat company.

Local soldiers of the 41st BIMa take part in a battalion-level exercise in Guadeloupe Island. The marsouins are armed with basic infantry weapons such as the AA-52 MG and 81mm mortars.

Régiment d'Infanterie de Marine du Pacifique (RIMaP / NC) *Nouvelle Calédonie* – Marine Infantry Regiment of the Pacific (New Caledonia)

A unique operational unit of ground forces in New Caledonia, the RIMaP /NC is tasked with asserting the sovereign power of France in the South Pacific. The Battalion of the Pacific was created during the First World War. Thirty years later it was incorporated into the Free French Forces and fought heroically against the Afrika Korps at Bir Hakeim in 1942. Today, the Regiment includes two combat companies (one being a company of parachutists from continental France) and an armored squadron equipped with AML-90s.

The Regiment participated in Operation Sandalwood in East Timor in 1999.

Régiment d'Infanterie de Marine du Pacifique-Polynésie (RIMaP / P) Tahiti –

Marine Infantry Regiment of Pacific-Polynesia

This light infantry regiment, which is composed of two combat companies, is the main defensive unit of French Polynesia. Stationed on the island of Tahiti, its working range extends to a territory that is as vast as Europe.

Pre-positioned Forces

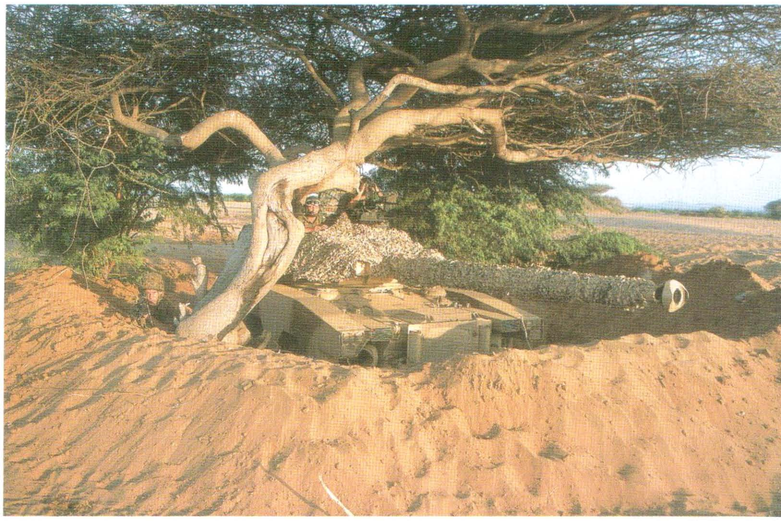
These are French Army troops under French command but based in a foreign country that has a defense agreement with France.

5ème Régiment Interarmes d'Outrmer (5ème RIAOM) Djibouti – 5th Combined Overseas Regiment

Present in the territory of the Republic of Djibouti since 1969, the 5th RIAOM is the most powerful of the French forces stationed in foreign countries. Along with a staff, it contains a combat company, an armored squadron, and a mixed battery of ground and anti-aircraft guns.

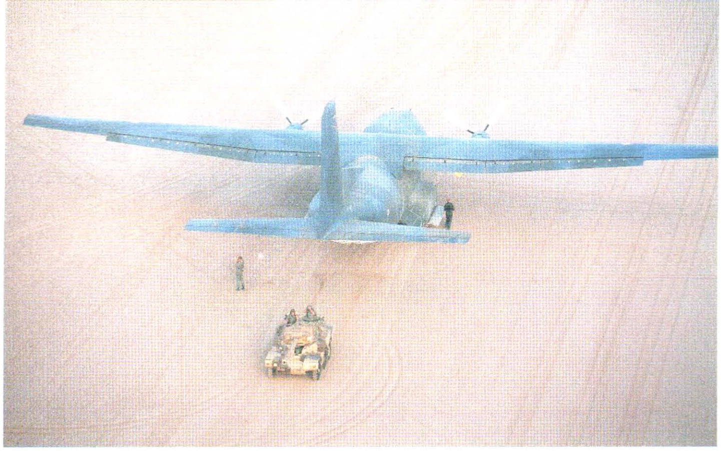
Descending from the 5th Regiment of Colonial Infantry, which distinguished itself during the First World War, the campaign of 1940, and the war in Indochina, the 5th RIAOM's mission is to act within the framework of the defense agreement with Djibouti in the protection of its territory. Djibouti, which has a strategic position on the Red Sea, has neighbors that are in perpetual conflict: Ethiopia, Erithrea and Somalia. The 5th RIAOM was involved in Operation Oryx 2 and Unosom in Somalia.

This photograph shows the command post of the 41st BIMa during an exercise. In Guadeloupe, the "Bigeard" hat is the traditional field hat of the TDM. Bigeard was a famous general of paratroops during the Indochina and Algeria wars.



A well-camouflaged ERC-90 Sagaie of the armored squadron of the 5th RIAOM holds a position in Djibouti. Note the desert camouflage net. The ERC-90 is armed with a 90mm gun.

An ERC-90s of the 5th RIAOM is seen on maneuvers in the great Bara depression. Temperatures in that region can reach 60° C (140° F). Djibouti is one of the hottest places in the world.



The 5th RIAOM is especially trained for deployment by land, sea and air. This aerial view shows an ERC-90 being loaded onto a Transall C-160 transport aircraft.

ERC-90s can also be transported by an LST (EDIC – Engin de débarquement de char et d'infanterie (Tank and Infantry Landing Craft)). The French Navy has two types of this kind of ship in the region. The Djibouti republic is divided into two parts by the Tadjoura Gulf.

ERC-90s and VLRA light vehicles painted in an effective desert paint scheme kick up dust as they traverse the oven-hot terrain of Djibouti.

The 5th RIAOM has two infantry companies that are normally transported in VLRA trucks or VAB armored personnel carriers. Note how each of the troops wears protection against sand and wind.

armée de TERRE

The French forces in Djibouti also have a small helicopter force that is used to deploy the 5th RIAOM infantry company.

The 5th RIAOM also has an artillery battery equipped with TRF-1 155mm guns and an anti-aircraft MISTRAL platoon.

The MISTRAL platoon and its VLRA truck were deployed to Kuwait for Exercise "Pearl of the West 96". Here marsouins discuss the progress of the exercise with some Kuwait soldiers.

Military assistance is also one of the tasks given to the French troops stationed in foreign countries. In this photo a Sagaie crew is working with a Djibouti Hummer crew.

6ème Bataillon d'Infanterie de Marine (6ème BIMa) Gabon – 6th Marine Infantry Battalion

Based at Libreville, the 6th BIMa is mainly an airmobile and armored combat unit made up primarily of paratroopers. It mission is to maintain a French presence in a friendly country and to assist the Gabonese forces. Present in Gabon for 25 years, the 6th BIMa takes its traditions from the 6th Regiment of Colonial Infantry, which was annihilated twice in its history.

Two paratroop companies that come from continental France and are replaced every six months constitute the main strength of the Battalion, which also has an armored platoon equipped with AML-90s. The 6th BIMa also serves as a logistic base and a platform for all the major operations conducted by the French in Africa. The Battalion is also responsible for a training center located in the African jungle and a nautical training center located at Port Gentil.

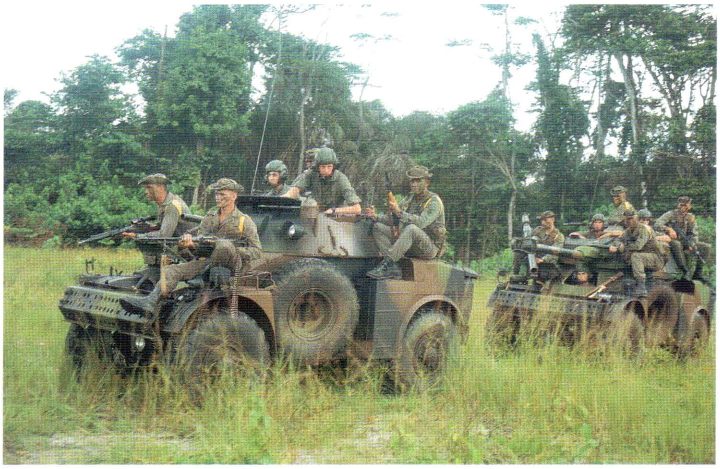
Speedboats are used to patrol the rivers in the Port Gentil region. Throughout the jungle, these boats are a good means of transport and combat support.

Patrolling in the salty mud of the Mangrove in Gabon is probably one of the hardest exercises to perform. Note that these marsouins have adopted the US tropical hat as part of their uniform.

Like everywhere in Africa, the VLRA is the best vehicle the French Army has to move troops on roads during the rainy season.

During their six-month tour of duty with the 6th BIMa, troops coming from metropolitan France, like these soldiers from the 1st RI (Régiment d'Infanterie – Infantry Regiment), learn how to maneuver in the dense bush.

The COMOTO (Compagnie Motorisée – Motorized Company) of the 6th BIMa practices road convoys, ambush drill, and search and destroy missions in the jungle south of Libreville.



Soldiers belonging to the COMOTO are mounted on VLRA trucks and are supported by the AML-90 and AML-60 armored car platoon of the 6th BIMa. The last AML-60s of the French Army equipped with a 60mm mortar were used by the Battalion.

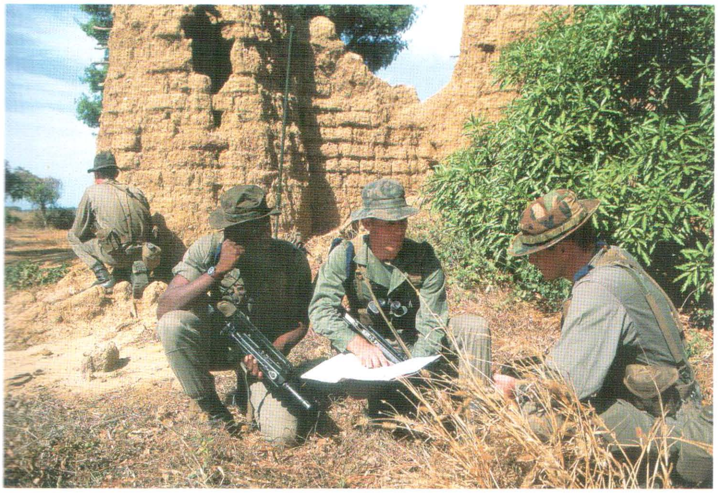
23ème Bataillon d'Infanterie de Marine (23ème BIMa) Dakar, Sénégal – 23rd Marine Infantry Battalion

Dakar, the capital of Senegal, has strategic importance for France. The 23rd BIMa, the descendent of the 23rd Regiment of Colonial Infantry, which was destroyed three times during World War One and with a flag featuring 12 battle honors, is based there. Its mission is to protect the installations of the French forces at Cap Vert. It can also assist the highly rated Senegalese army within the framework of the defense agreement and participate in supporting French forces engaged in Africa. Dakar, like Libreville in Gabon, is a logistic base used not only by the French during operations in Brazzaville, but also by the British during the recent intervention in Sierra Leone. The 23rd has a combat company of armored cars composed of AML-90s.

Members of the 23rd BIMa undergo training in the vast open region north of Dakar.

Marsouins of the 23rd BIMa exit their VLRAs to take up positions in foxholes.

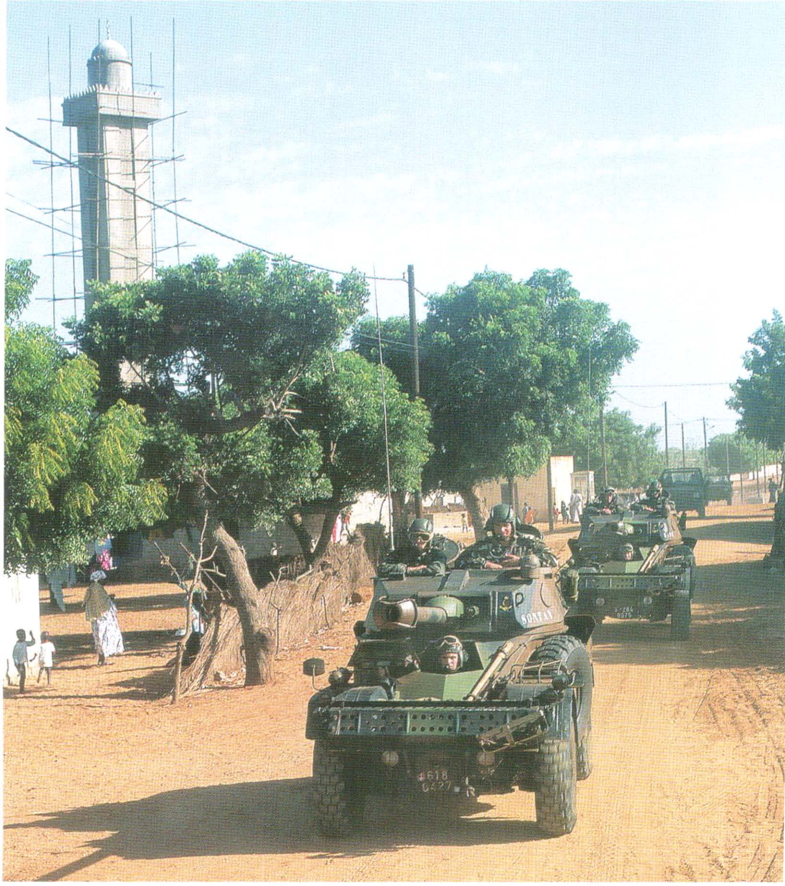
The 89mm LRAC (Lance roquette antichar – Antitank rocket launcher) is one of the weapons in the arsenal of the TDM. The chéche (desert scarf) worn by these men is a part of the uniform issued to French troops operating in semi-desert terrain like northern Senegal.



French marsouins of the 23rd BIMa participate in an exercise near a Senegalese village. The TDM has a tradition of being around the locals "like a fish in the water". Their knowledge of Africa and its local customs is due to the "colonial" culture of the TDM.

A company from the 23rd BIMa took part in Exercise "Ghidimakha" along with several African armies along the border of Senegal and Mauritania. Among the French troops was this sniper with his FR-F1 and an observer. Sniping is very effective in Africa. Local rebels, and even some military groups, are not equipped for long range precision combat. They can become instantly demoralized when pitted against a well-camouflaged sniper.

This battery of 81mm mortars was set up amidst a typical Senegalese landscape of Baobab trees.



Like all of the French units based in Africa, the 23rd BIMa uses the AML-90 armored car, an "old lady" that is really appreciated by its crew.

43ème Bataillon d'Infanterie de Marine (43ème BIMa) Abidjan, Côte d'Ivoire – 43rd Marine Infantry Battalion

This battalion, which includes a combat company and an armored squadron, has the same mission as the 6th and the 23rd BIMa. Its history is also brilliant. Since its creation in August 1914, it has been cited nine times. Like all of the units stationed in Africa, one of its missions is to protect western nationals, as was the case during the recent events in the Ivory Coast. The 43rd BIMa has the peculiarity of having barges to conduct battle in a lagoon environment. This flat vessel is as much a weapon as any infantry assault or armored car.

Overseas the TDM is also in charge of Assisted Military Service (*Service Militaire Assisté* – SMA), which in Guyana, the Antilles and the Pacific provides youth with basic military training and teaches them a civilian job. As in the past, the TDM is important to local economy.

Thus concludes this brief overview of the French *Troupes de Marine*, a unit rich in tradition but modern in their use . . . and on whom the sun never sets.

Part the support company of the 43rd BIMa is a "lagoon" unit that has access to three barges (LCUs) and six Zodiac boats. Abidjan, the capital of Ivory Coast, is on a lagoon, and the French forces could use it to evacuate Westerners in case of problems.

Taking full advantage of the shooting range in Lomo, a solider of the 43rd BIMa practices firing a 112mm APILAS heavy rocket launcher.

The 43rd BIMa is able to make use of the shooting range in Lomo, 250 km (155 miles) north of Abidjan. There the marsouins can practice live firing in a typical savanna-like environment.

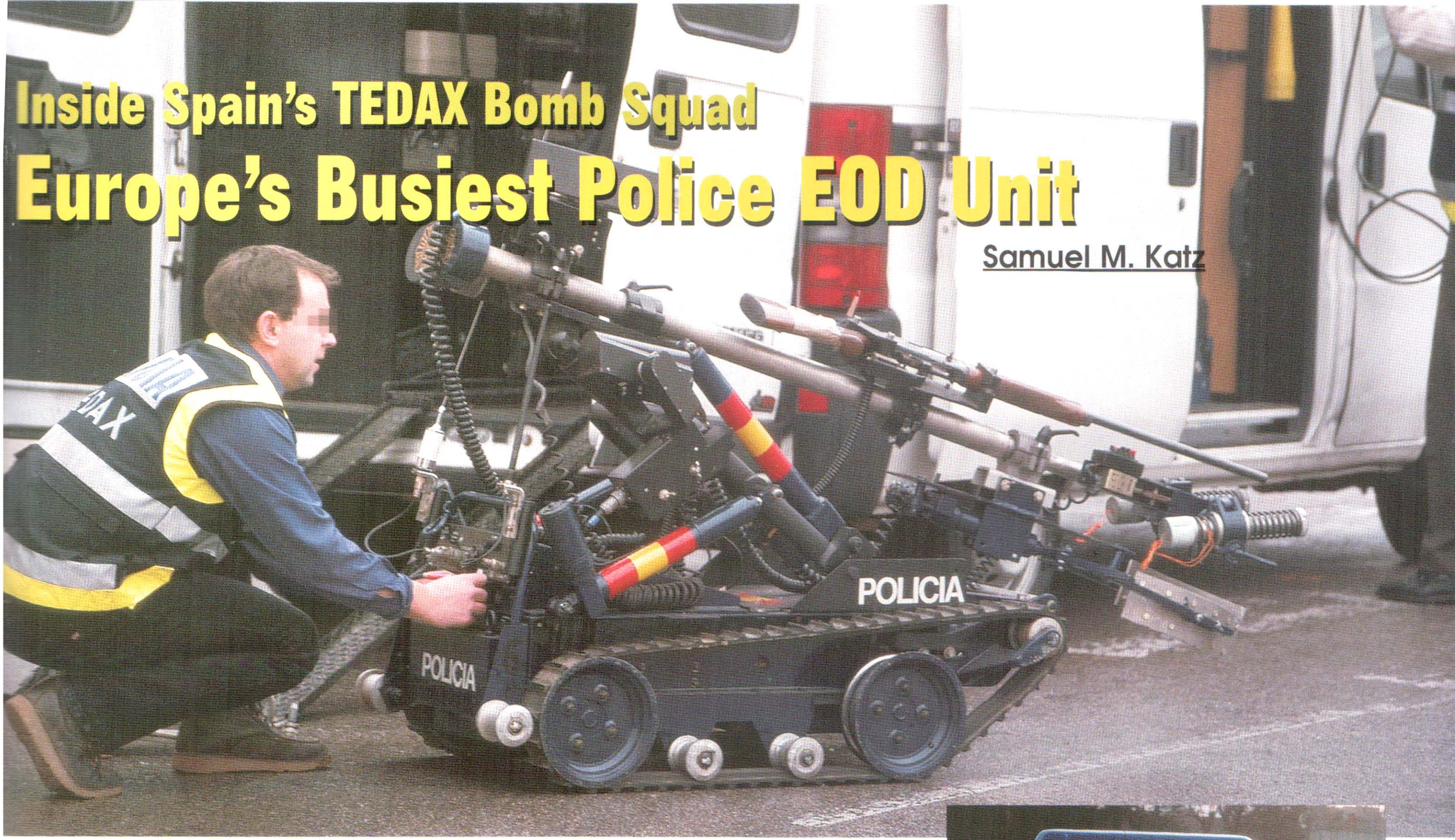
The reconnaissance platoon of the 43rd BIMa is mounted on Peugeot P-4s armed with the AA-52 machine gun. This photograph was taken at the firing range in Lomo.

AML-90s go into action at the Lomo firing range. Despite its age, the AML is still considered the "Queen of Africa" as far as light armored cars are concerned.

The AML-90's 90mm gun could not destroy a modern main battle tank such as the T-80, but the weapon is perfectly adapted for Africa, and the vehicle's engine is easy to maintain.

Inside Spain's TEDAX Bomb Squad
Europe's Busiest Police EOD Unit

Samuel M. Katz



A Tedax officer readies the tandem's faithful robot for action.

On the same day that a series of bombs exploded in a Madrid shopping plaza, a Spanish politician in the Basque country was gunned down on a quiet street as he walked home from watching a basketball game with some friends. The terrorists who pumped a 9mm slug through the brain of the assassinated politician also inscribed a daunting threat to authorities in the blood of their victim. "We are behind you ETA," the dripping graffiti pronounced, as shocked Spanish authorities geared themselves for a wave of political terrorism the like of which Spain had yet to endure.

Motorists attempting to clear the always-congested Avenida Ciudad de Barcelona in downtown Madrid knew why traffic had come to a clear and grinding halt. After all, they had seen it too many times before. Hundreds of uniformed police officers, some looking nervous and anxious, stood three feet apart creating a man-made perimeter that stretched the length of two city blocks. Inside the perimeter, a dozen high-ranking police commanders juggled Motorola radios and cellular phones as they coordinated the operation with a police chopper circling overhead. Inside that wide and thinly stretched perimeter, a handful of men wearing civilian clothes peered through field glasses at an Opel Sedan parked near the Atocha rail station. The car had been reported stolen a few days earlier in Bilbao, in Basque country, and several wires protruding from the glove compartment was reason enough for an alert traffic cop to call in the cavalry. Only weeks earlier, only a mile away, Basque terrorists had rigged an identical vehicle with a powerful radio-controlled explosive device and used it to assassinate a military officer.

The officers inside the sterile area of the inner-perimeter know that the stolen car is trouble—a bomb-sniffing dog provided the passive response indicating traces of an explosive in or around the vehicle. Following standard operating procedures, the officers guided a small tracked-robot, armed with a 12-gauge shotgun and other water charged disrupters, to the car's trunk courtesy of a remote control and TV-monitor. Raising the gun's barrel remotely, the officer fired a round through the trunk's lock, providing the officers with a way into the vehicle. Peering through the sketchy black-and-white TV screen monitoring the robot's movements, the EOD officer still sees suspicious items inside the trunk that could pose problems—a briefcase, a tire with some tools inside and a canvas bag. With little choice, the EOD officer realized that the only way to determine whether or not the car was actually laden with explosives. In the vernacular of the bomb technician, the manual approach is always the last resort.

With the help of his partner—EOD teams always operate in tandems—the senior bomb tech cumbersomely entered his Canadian-built Kevlar cocoon. The eighty-pound suit is uncomfortable and heavy and movement inside the armored chest and leg covers is difficult. A respirator, protected by a dome-like helmet completed with a domed Plexiglas visor designed to deflect, allows the EOD

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A police cruiser in the Madrid police station where a Tedax team is based stands at the ready to escort the bomb techs to their next call.

A Spanish Police K-9 truck responds to a suspicious car call near Barajas International Airport to secure a perimeter and await the arrival of Tedax officers.

GUIAS CANINOS
BOXER

Realizing that they are in the kill zone of any car bomb, anxious K-9 officers send their bomb-sniffing dogs to a suspicious car that could be holding an eighty-kilogram car bomb.

The nondescript Tedax vehicle races to the bomb call, realizing that when it comes to ETA devices, the effort to render a device safe is one with the clock always ticking.

POLICIA
TEDAX

Tedax officers Rafael and his partner Pedro* confer with responding K-9 officers as they map out a plan of attack against the suspected car bomb.*

officer to breath. The helmet is designed to withstand a powerful high-explosive blast; privately, many EOD officers bemoan that all the visor does is retain something for a funeral. Completing the officer's gear is a round metal shield. Bombs that Basque terrorists have planted in their thirty-year war against Spanish authorities have been two things—highly complex designs of brilliant sophistication and built to kill any police officer foolhardy or brave enough to attempt to neutralize it. Most terrorist bombs in Spain pack enough of a blast and enough shrapnel to pepper an armored car full of holes. With bits of equipment like the shield and the Kevlar bomb suit, The EOD techs try and get as much protection as possible when they walk up close and personal to a ticking device.

The bomb technician is trained to focus solely on the problem at hand and on his checklist of standard operating procedures. Thoughts of family, and of life and limb, will only cloud the work that needs to be done. The walk toward the suspicious is a solitary exercise in courage and experience. Bomb techs work in teams of two, but when face to face with what could be a car bomb packed with nails, explosive ordnance disposal work is all about one man coming face to face against incredible destructive power. Kneeling by the package, the officer deems the sack to

POLICIA
TEDAX
POLICIA

Rafael watches on through field glasses as the robot is guided to the trunk of the suspected car. Moments later, while maintaining radio communications with headquarters as well as watching his robot in action on a closed circuit TV, Rafael makes the call to pop the car's hood wide open.

POLICIA
TEDAX

Rafael and Pedro* observe the robot's progress on a closed circuit TV monitor as they assess the proper angle at which to aim the water-powered explosively charged disrupters.*

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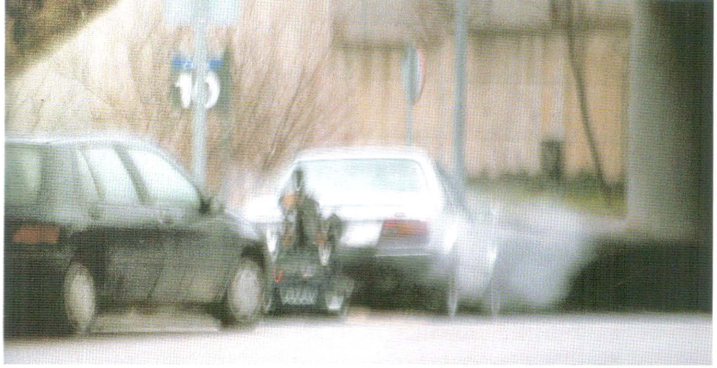
* A pseudonym.

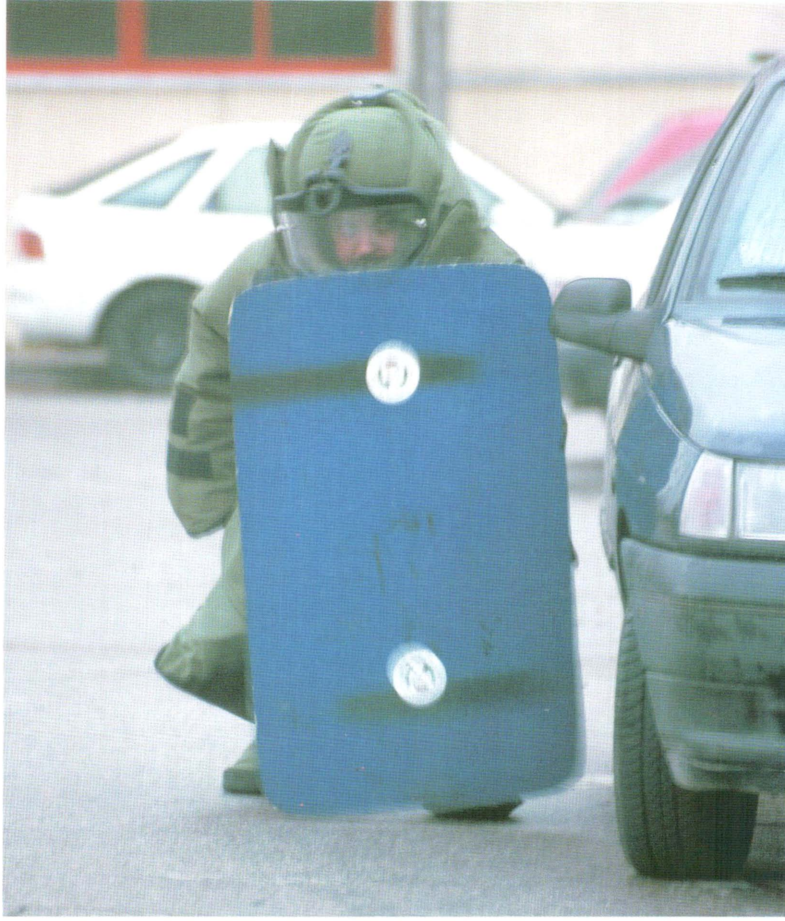


FUEGO! The disrupter blows open the hood on the suspected ETA car bomb.

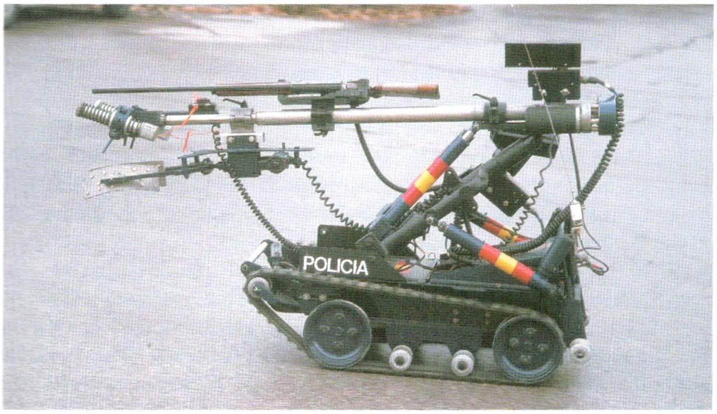
hold nothing more than personal belongings. Overcome by the exhaustion of carrying around the massive weight of the suit and his shield, plus feeling the adrenaline quickly dissipating from his veins, he kneels to one knee and throws his partner the thumb's up sign that all is clear. It is just another day at the office for the officers of TEDAX, the Spanish National Police bomb squad that works in the capital of Madrid.

In Spain the bomb techs of Tedax operate in a target rich environment squared-off against the world's most sophisticated bomb-builders, the men and women of “ETA,” ETA, or “*Euskadi Ta Askatasuna*,” (Basque for Fatherland and Liberty Group) was founded in 1959 by a group of student activists dissatisfied with the moderate nationalism of the traditional Basque party. The group's aim is the creation of an independent homeland in Spain's Basque region. ETA's first activities involved planting explosives in the cities of Bilbao, Vitoria and Santander in 1959. Because of the many discarded shells and other remnants of war that are found throughout Spain, ETA focused its efforts and its assets on bomb building.

When Spanish dictator General Francisco Franco died in 1976 and democracy was restored in Spain many exiles returned, including many

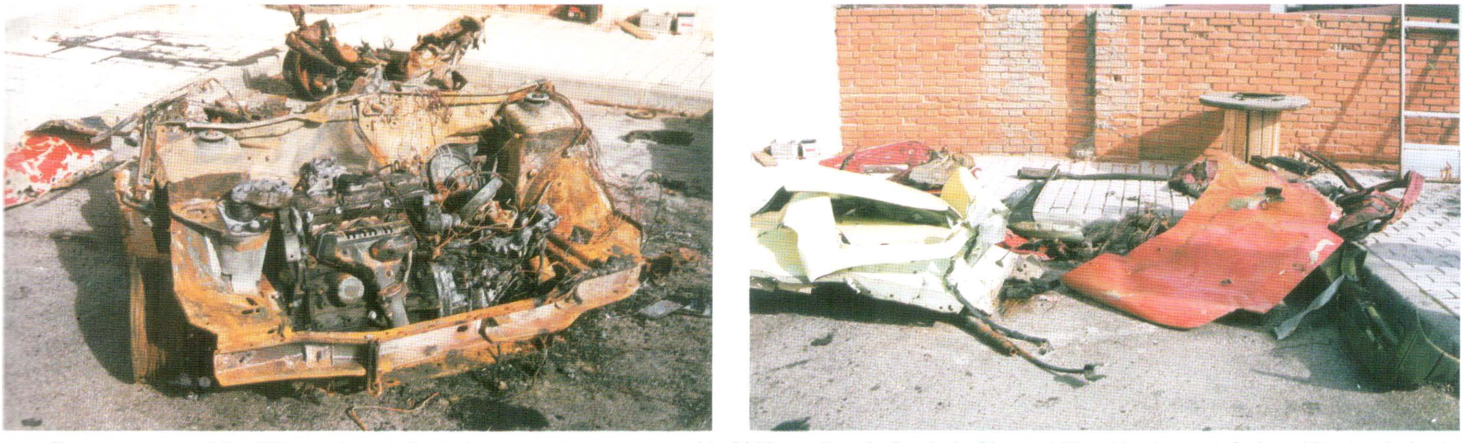


Rafael crouches for cover as he approaches the still-to-be-deemed-safe vehicle, taking every precaution possible in order to work safely and to live to fight another day.*

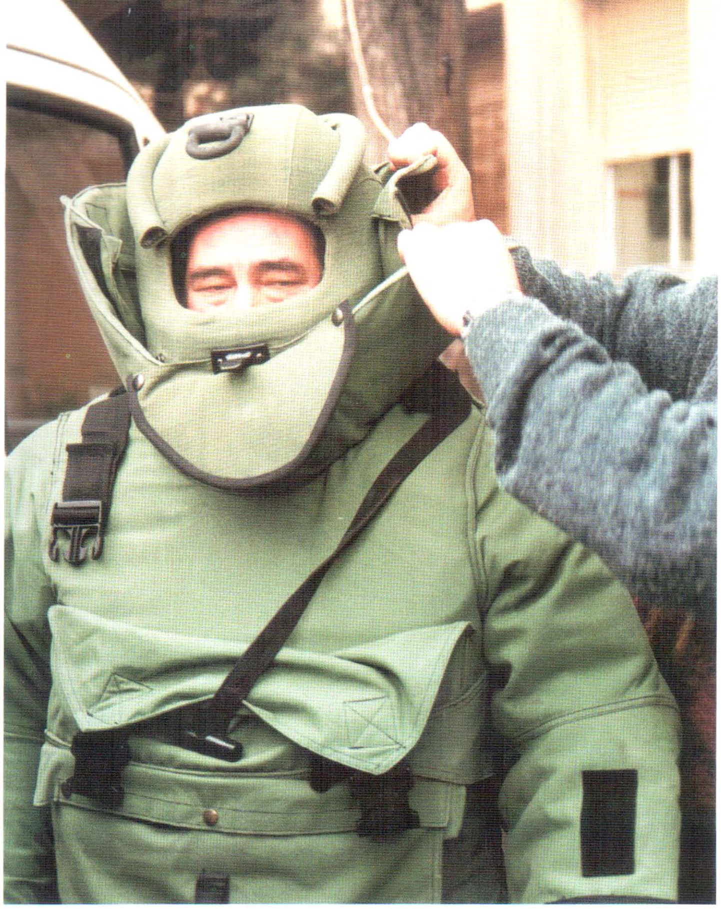


The small tracked robot enables the officers to work safely from a secure distance at the initial and most dangerous phases of handling an explosive device.

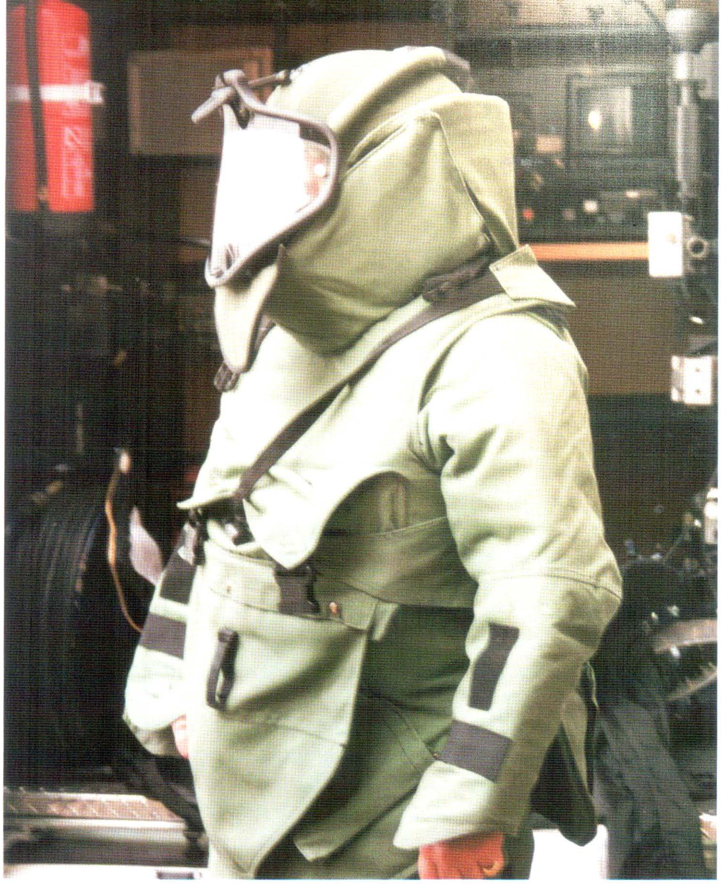
Rafael gathers his ballistic shield and some other tools before walking the seventy meters to what could be a date with the explosive hell of destiny.*



The remnants of the ETA car bomb that detonated on January 21, 2000, on the Calle de la Pizarra killing Lieutenant-Colonel Pedro Antonio Blanco Garcia.



A Tedax bomb tech is assisted into his Kevlar protective suit after being called into action for a suspicious case left at a bus stop.



The Canadian-built bomb suit used by Tedax is heavy and cumbersome and the only thing that any bomb tech worth his salt would want to wear when going up against an ETA device.

Basque nationalists on the run from the Spanish intelligence services. Spain's new democratic government granted considerable autonomy to the country's regions. The Basque region was given its own parliament and was granted control over issues such as education and taxes, while the distinctive Basque language and culture was promoted in schools. For hardcore operatives in ETA, many of whom trained in Libya, Lebanon and had worked with the Palestinians, Irish and German Red Army factions in Europe's terror wars of the 1970s, a partial autonomy was not enough. They believed that Basques should have full independence from Spain, and to this end they intensified the violence against security forces and politicians. Police officers and politicians soon become the group's main targets.

ETA is operationally headquartered in the Basque provinces of Spain and France, the organization is reported to have members and underground supporters in locations as diverse as Algeria, Argentina, Belgium, Cape Verde, Cuba, Dominican Republic, Ecuador, Germany, Holland, Italy, Mexico, Netherlands, Panama, Sao Tome and Principe, Uruguay, and Venezuela. Most recently ETA activities have been coordinated from France, although some of the organization's leaders are suspected of directing the group's activities from Latin America as well. For thirty years, ETA's bombers and assassins executed a dirty war in which bombs were placed near police stations and government officials were shot in the back of the head. Bombs are not precise weapons of war and many innocent civilians have been killed and maimed. ETA has killed about 800 people since 1968 when it began its terrorist campaign for independence of the Basque region of northern Spain.

In September 1998, ETA announced its first cease-fire since the start of its thirty-year campaign of violence. The cease-fire, a carbon copy of the agreement that brought temporary peace to Northern Ireland, would not last. In December 1999, the Basque bombers were once again at work. So, too, were the men of Tedax.

Heavily armed SWAT cops rush to their vehicles to provide ballistic back-up to the Tedax officers after a bomb call near a major Madrid hotel and shopping promenade.

Most police vehicles that support Tedax assignments are built to deflect grenades or Molotov cocktails.

DIRECCIÓN GENERAL DE LA POLICÍA
E.T.A.

An ETA pipe bomb displayed in the Tedax Museum.

DIRECCIÓN GENERAL DE LA POLICÍA

A homemade ETA grenade, routinely tossed at responding police vehicles.

Madrid, the Spanish capital and one of the most beautiful cities in Europe, is a vibrant and majestic metropolis. A city known for its soccer, dining and zest for celebration, Madrid is also a city living in fear. It is a city that is held hostage by the bomb. On January 21, 2000, at 8:06 am, nearly thirty-pounds of high explosives hidden in the trunk of a stolen sedan was detonated by remote control as Lieutenant-Colonel Pedro Antonio Blanco Garcia walked by on the on the Calle de la Pizarra, a quiet street in a Madrid neighborhood where many military families lived. Lieutenant-Colonel Blanco Garcia was killed instantly by the blast, and the powerful bomb shattered much of the street. Moments later, four blocks away, the terrorists detonated a second car bomb blocks away in a calculated tactic to kill bomb squad officers rushing to the scene. According to one senior bomb squad officer working in Madrid for nearly twenty years, "This strategy is text book ETA!"

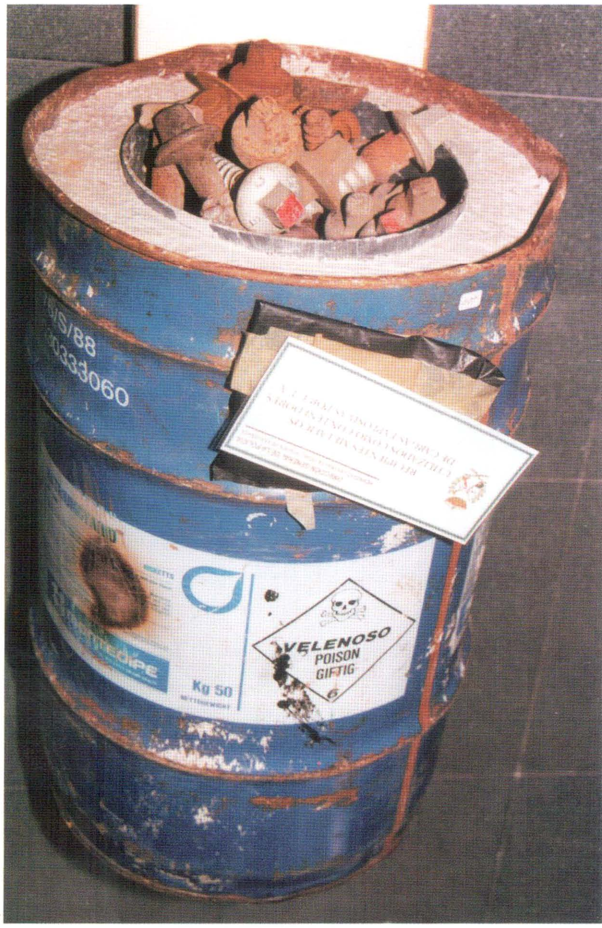
As a result of the Basque bomb-builders being so sophisticated, Spanish police EOD technicians soon developed the reputation as being the world's best—and busiest—bomb squad. Known by their acronym of Tedax, *Técnico Especialista en Desactivaciders being so sophisticated*, the Spanish national police bomb squads are among the busiest in the world. In the international bomb disposal community, even among bomb techs in Jerusalem and Belfast, the Spanish are considered the elite. Since their inception in 1975, Tedax has handled over 15,000 kilograms of explosive devices and rendered safe some 3,500 actual devices. There are Tedax teams throughout Spain in twenty-six cities throughout the country, but the men in Madrid are its elite and the busiest.

Because the bomb techs are specifically targeted by terrorists, the Tedax bomb techs live their lives in anonymity, always looking over their shoulder. In order to avoid undue attention, they wear civilian clothes on duty and drive unmarked vehicles. Over thirty Tedax officers have died in the line of duty, either being killed by booby-trapped ETA devices, or being targeted by ETA assassins. For the officers assigned to a Tedax unit, the campaign against ETA is far more than a job, it is a matter of life and death.

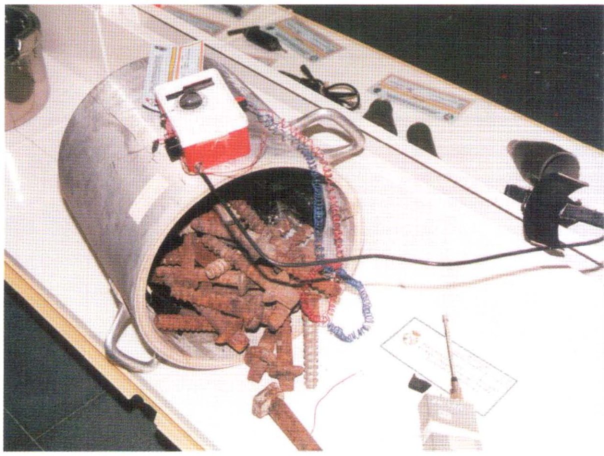
Because so many Tedax bomb techs have been killed in action, the robot has become the primary tool of the Spanish bomb tech—any measure of rendering a device safe through remote means is preferred over having to walk up to an actual device. Because Tedax is a national force, often called into to render safe devices in rough terrain, the unit employs some very unique robotic devices that can be transported conveniently by chopper, including a French-built device that weighs little more than a child's motor car. Numerous robots have been destroyed when they have been deployed against ETA devices, but the Tedax officers hold no sentimental attachments to the devices. "A robot is a machine that we use, and nothing more," claims a senior Tedax officer surveying the damage of yet another ETA device in the Basque country that was flown to Madrid for advance forensic examination, "robots don't breath, they don't have children and they don't have funerals. I rather fill a cemetery with all the robots in the world than with one of my officers."

Unlike most bomb squads in the world, Tedax officers are also tasked with investigating each and every incident and device they are called to. These men are far more than technicians, they are also scientists and detectives. Tedax officers must analyze each device they render safe (or a device that has detonated before they arrived) and administer the investigation as well as assist state prosecutors in gathering evidence for court proceedings. The forensics aspect of Tedax's day-to-day operations helps keep the officers abreast of the latest developments in bomb-building engineering and chemistry.

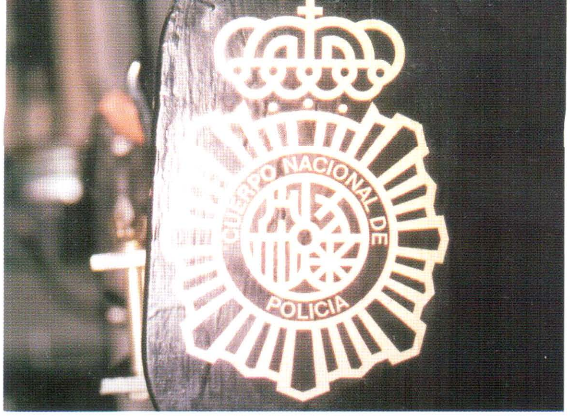
The work is exhausting and demanding. Many officers are at work more often than home and the days can be long and grueling—especially considering the fact that the officers always work with the knowledge that they are targets. Each time the radio summons them to action, they never know if the car bomb planted in the center of town might just be a trap. Tedax officers are all volunteers and they are all selected into the unit after a grueling series of exams



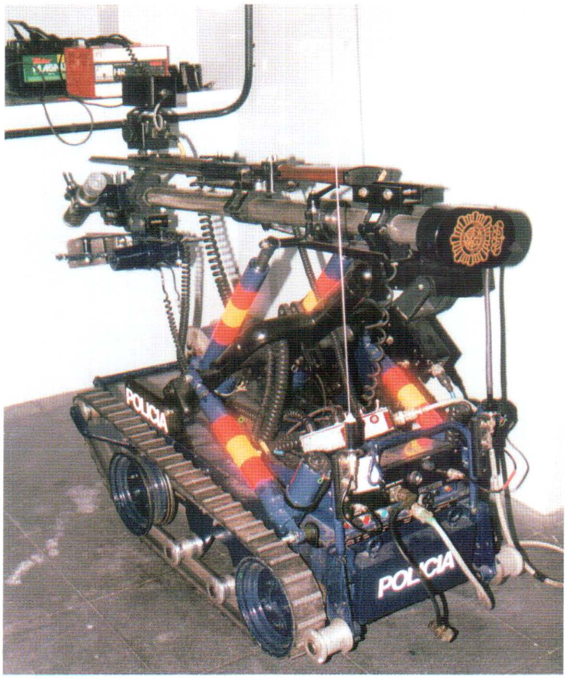
A powerful ETA tin drum bomb, crammed with forty kilograms of explosives and fifty kilograms of shrapnel was designed to kill hundreds.



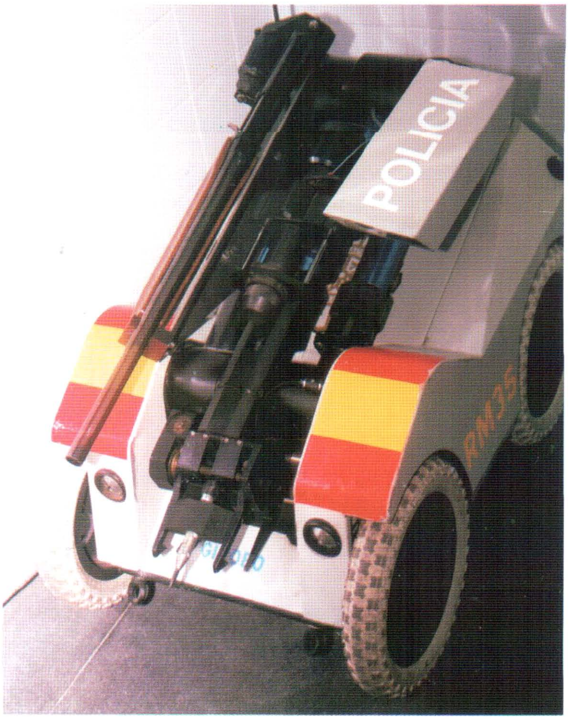
Shrapnel, found crammed in a sophisticated device built by ETA bomb-masters, was hidden inside a soup pot.



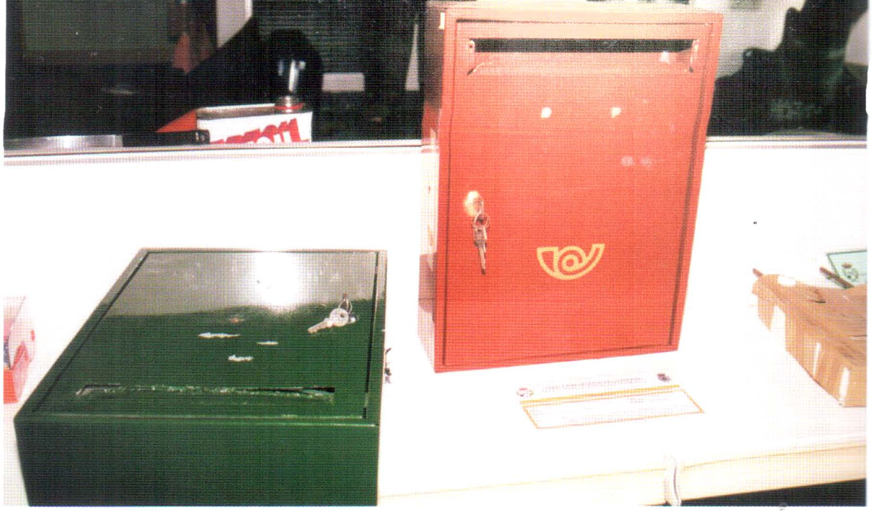
The emblem of the Spanish National Police



The Tedax robot is light, portable and the next best thing to actually being up close and personal with a bomb.



The light, highly-portable, French-built robot used by Tedax EOD officers in rural areas.



A sophisticated ETA bomb, built into a mail box and detonated once open by photoelectric cells, killed several Tedax bomb techs near Madrid.

designed to see if the officer has the academic aptitude to be a bomb tech, as well as the nerve required to walk up to a bomb.

It is late in the afternoon on a damp winter's day and the officers working in central Madrid are summoned to reports of a car, with stolen plates, parked alongside a busy thoroughfare near a police station close to Barajas International Airport. Tossing their cigars to the ground, Rafael* and Pedro*, the two bomb techs who caught the call, race to their bomb truck and head toward eastern Madrid. Their white van bears no police markings, other than a flashing blue light. The van, however, holds all the equipment the officers would need—including bomb suit, robot, disrupters and other tools. By the time they reach the area, already roped off by dozens of responding officers, the tension of this being a real call begins to permeate through the bodies of the seasoned and experienced officers. K-9 officers, guiding specially trained bomb-sniffing German shepherds, have already sent their dogs to the gray sedan hoping that they would indicate a "positive" or "negative" hit as to the presence of explosives. If there is the scent of any explosives, the dog will simply sit down next to the vehicle. But the rain, and winds, makes it difficult for the dog to be 100% positive. Rafael and Pedro will have to make that determination.

ETA's weapon of choice, in its thirty-year war, has been the car bomb. They have killed hundreds in attacks throughout Spain with ingenious, almost impossible to neutralize, devices planted deep inside the seats, trunks and engines of stolen cars. Many car bombs will have two or three devices planted inside them. When one or two are neutralized, the third is tripped killing the EOD officer who, by now, might have let his guard down. ETA's tactics are brutal and brilliant.

Rafael, the senior bomb tech and a father of six, suits up as his partner Pedro readies the robot for deployment. The robot grinds a slow path to the vehicle but the car seems wrong. As Pedro guides the robot and Rafael removes the suit from its holder, a gnawing feeling in his gut tells him that this car is packing something more than a leaky transmission. The robot, its water-driven disrupter armed and ready, is guided to the car's hood and then the forward moving arm is raised to be point blank from the lock. After yelling *"Uno, Dos, Tres....Fuego,"* to warn the police officers working the perimeter as to the impending blast, Pedro presses a red button on the robot's control panel and the disrupter is fired. The blast is deafening and the hood pops open in a violent and jerky move. Rafael, forced to determine whether or not the car is carrying a bomb, suits up with Pedro's assistance and walks carefully to the gray vehicle. Beads of sweat stream down Rafael's face and the visor slowly fogs up. But the trunk holds nothing, other than some ETA literature. Relief, for the moment, is joyous. A few months later, in the summer of 2000, a car looking exactly like the "neutralized" device in Madrid detonated in the Basque regional capital of Vitoria killing a Socialist politician and his bodyguard. ETA claimed responsibility for the bombing.

In Madrid, following the last major ETA bombing campaign in the winter of 2000, one million men, women and children protested in a stoic vigil meant to give the bomb builders a message—enough is enough. For the men of Tedax, and their comrades north of the border, echo the sentiments of their fellow citizens fed up with the indiscriminate bloodshed. Yet the bomb techs know that they are all the stands between life as usual, and unstoppable bloodshed.

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* A pseudonym.

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